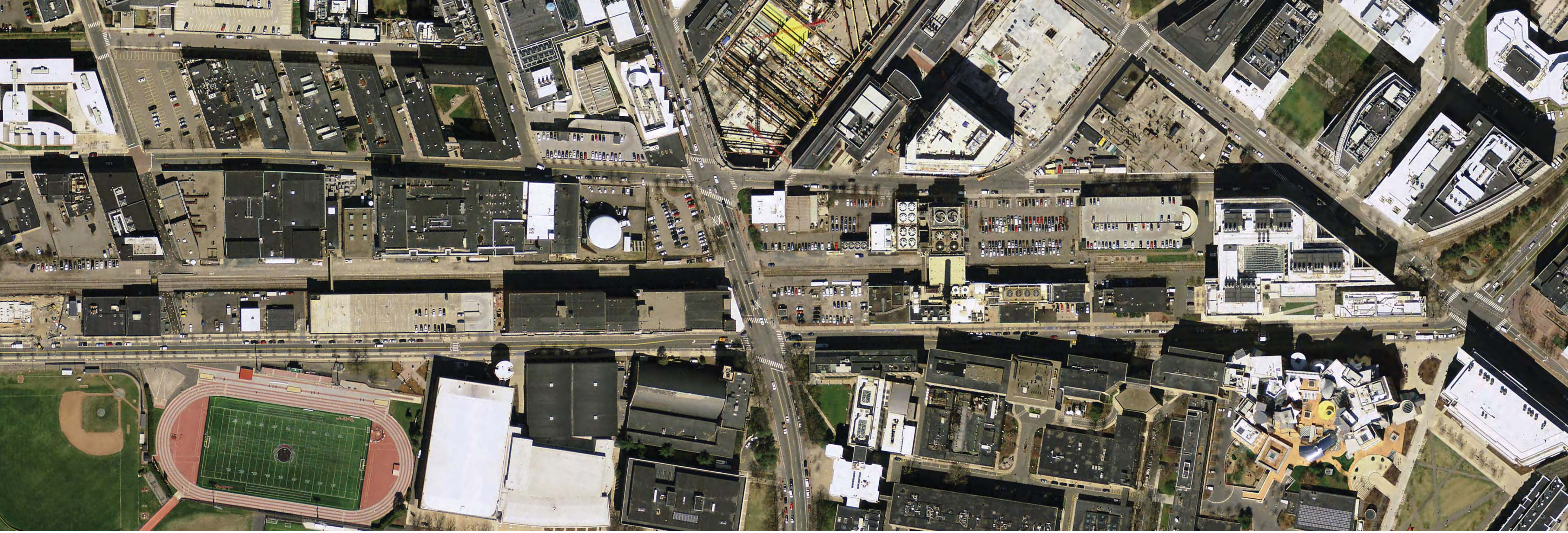
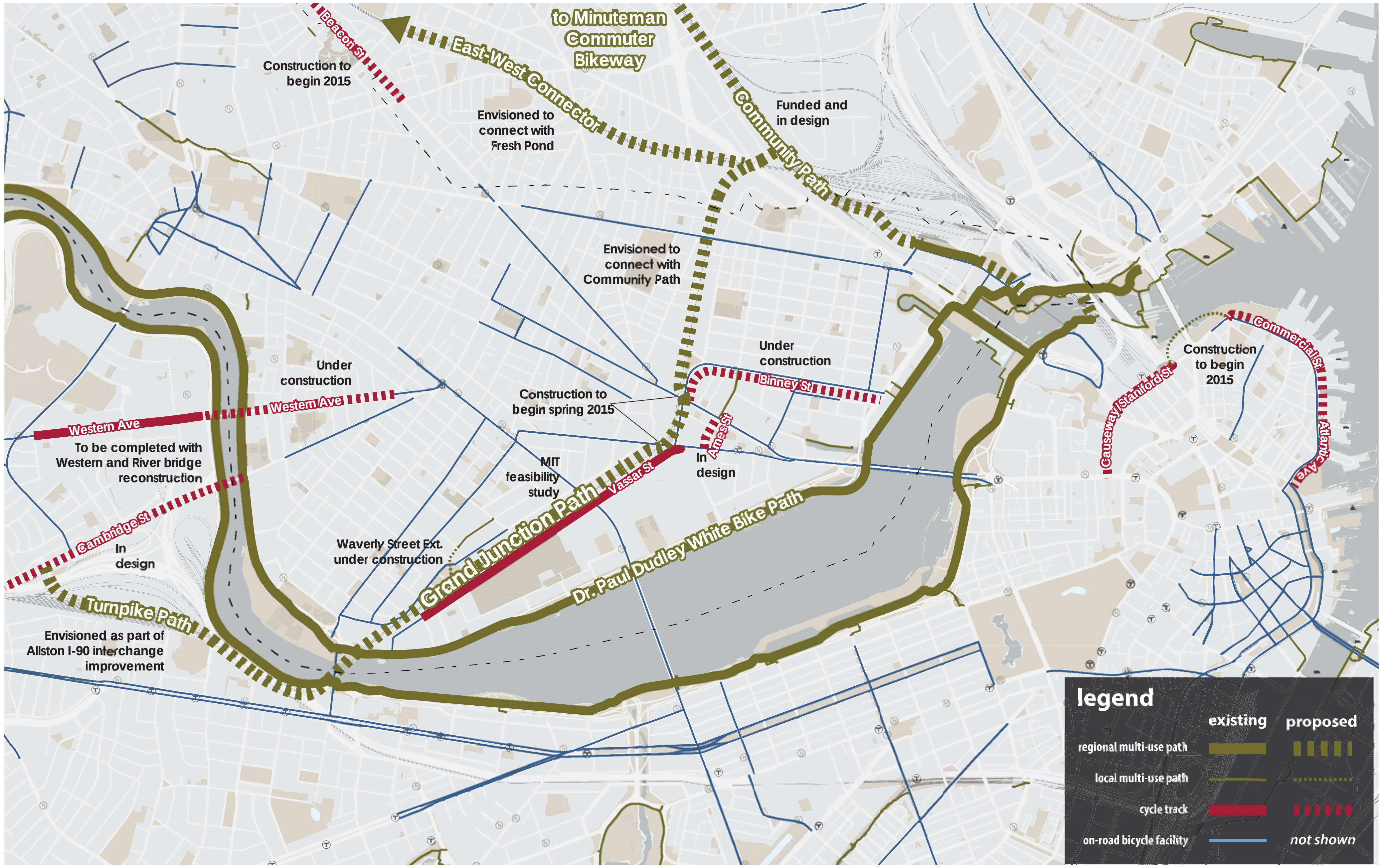


Grand Junction Community Path and MIT Property Feasibility Study

October 2014

Existing bicycle facilities and proposed regional multi-use paths


to Minuteman Commuter Bikeway
East-West Connector
Community Path
Beacon St
Construction to begin 2015
Envisioned to connect with Fresh Pond
Funded and in design
Envisioned to connect with Community Path
Under construction
Binney St
Under construction
Western Ave
Western Ave
To be completed with Western and River bridge reconstruction
Construction to begin spring 2015
Ames St
In design
MIT feasibility study
Vassar St
Cambridge St
In design
Waverly Street Ext. under construction
Grand Junction Path
Dr. Paul Dudley White Bike Path
Turnpike Path
Envisioned as part of Allston I-90 interchange improvement
Commercial St
Causeway/Staniford St
Construction to begin 2015
Atlantic Ave
legend
existing
proposed
regional multi-use path
local multi-use path
cycle track
on-road bicycle facility
not shown

Grand Junction Community Path and MIT Property Feasibility Study

Prepared for the
Office of Campus Planning
Massachusetts Institute of Technology

by

Kleinfelder
with
Toole Design Group
McMahon Associates
Corcoran & Associates

October 2014

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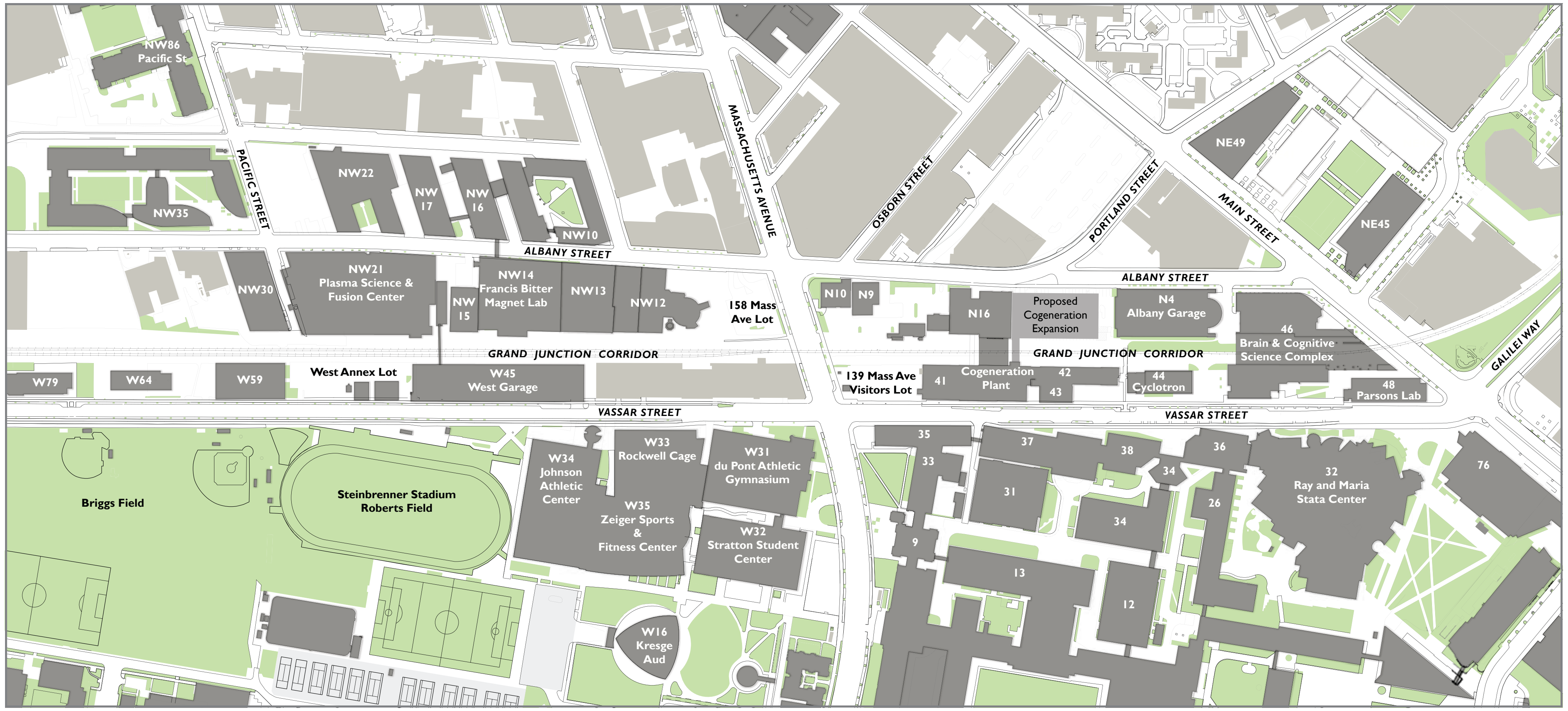
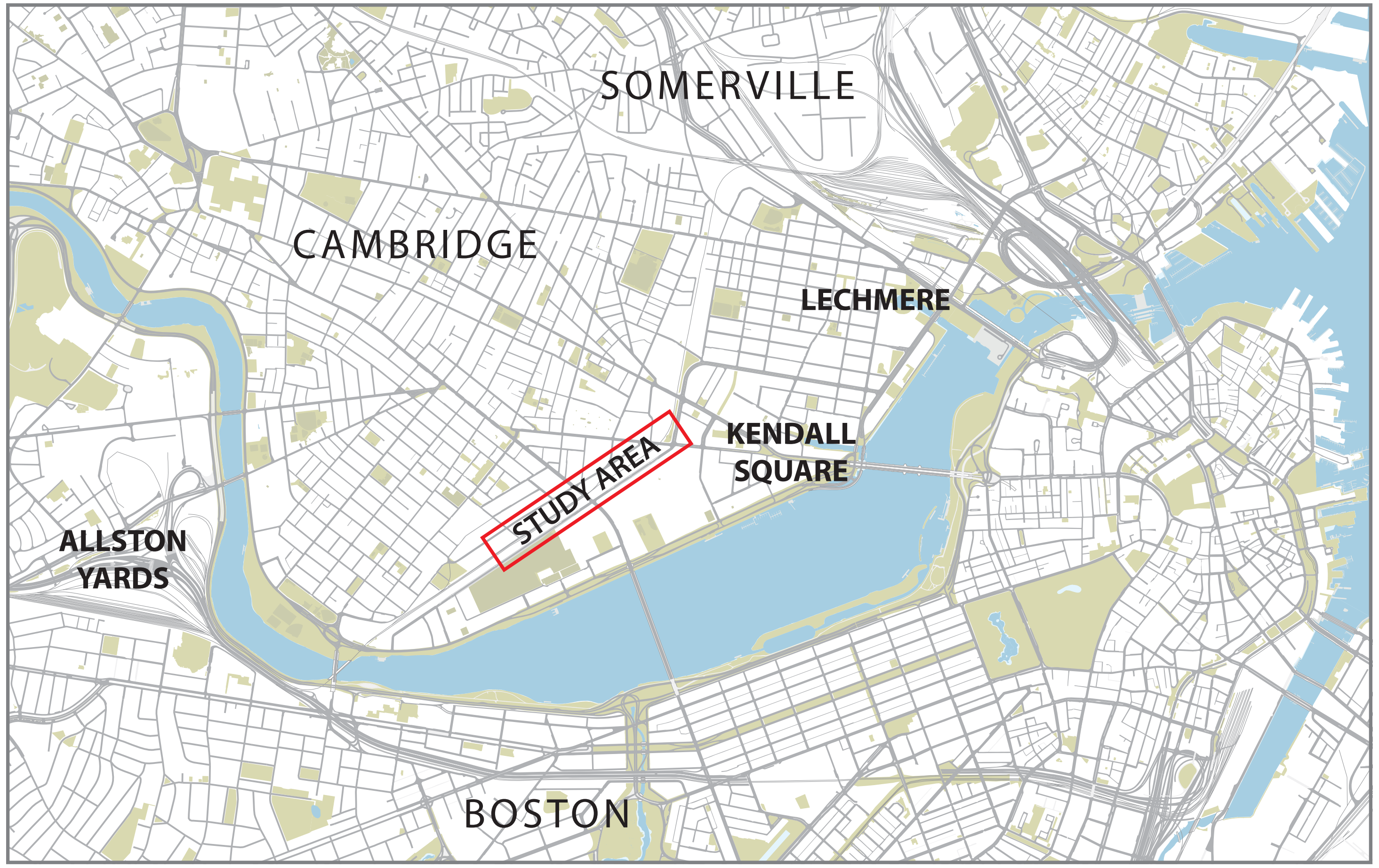
Catherine Vanderwaart	Graduate Student Council
Ken Williams	MIT Investment Management Company


NW86
Pacific St
NW35
PACIFIC STREET
NW22
NW 17
NW 16
NW10
ALBANY STREET
MASSACHUSETTS AVENUE
OSBORN STREET
PORTLAND STREET
MAIN STREET
NE49
NE45
GALILEI WAY
NW21
Plasma Science & Fusion Center
NW30
NW14
Francis Bitter Magnet Lab
NW 15
NW13
NW12
158 Mass Ave Lot
N10
N9
N16
Proposed Cogeneration Expansion
N4
Albany Garage
ALBANY STREET
46
Brain & Cognitive Science Complex
GRAND JUNCTION CORRIDOR
GRAND JUNCTION CORRIDOR
W79
W64
W59
West Annex Lot
W45
West Garage
139 Mass Ave
Visitors Lot
41
Cogeneration Plant
42
43
44
Cyclotron
48
Parsons Lab
VASSAR STREET
VASSAR STREET
Briggs Field
Steinbrenner Stadium
Roberts Field
W34
Johnson Athletic Center
W33
Rockwell Cage
W31
du Pont Athletic Gymnasium
W35
Zeiger Sports & Fitness Center
W32
Stratton Student Center
W16
Kresge Aud
35
33
37
38
34
36
31
34
26
32
Ray and Maria Stata Center
76
9
13
12

Study Area

Locus Map


SOMERVILLE
CAMBRIDGE
LECHMERE
KENDALL SQUARE
STUDY AREA
ALLSTON YARDS
BOSTON

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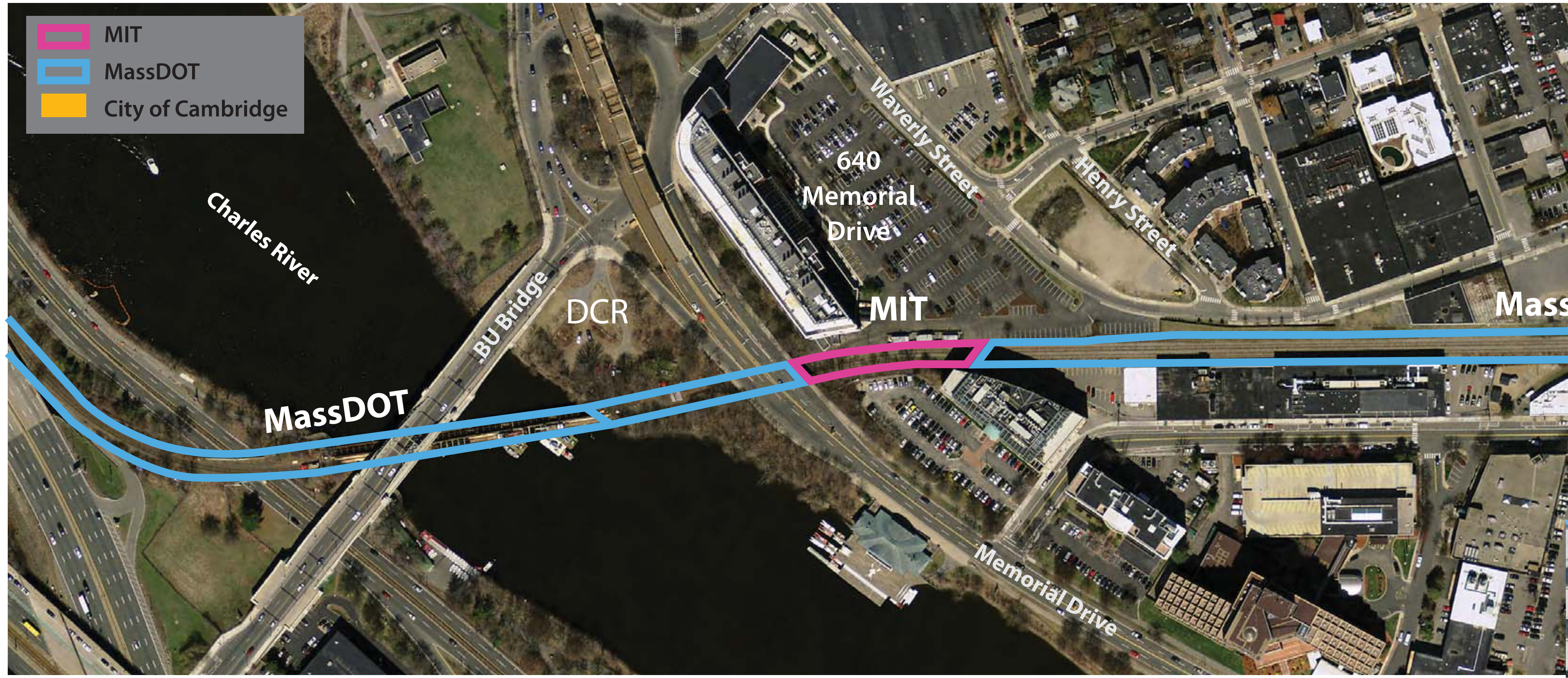
Street Crossings	11
The Memorial Drive Area	12
Vassar Street Improvements	14
Next Steps	15

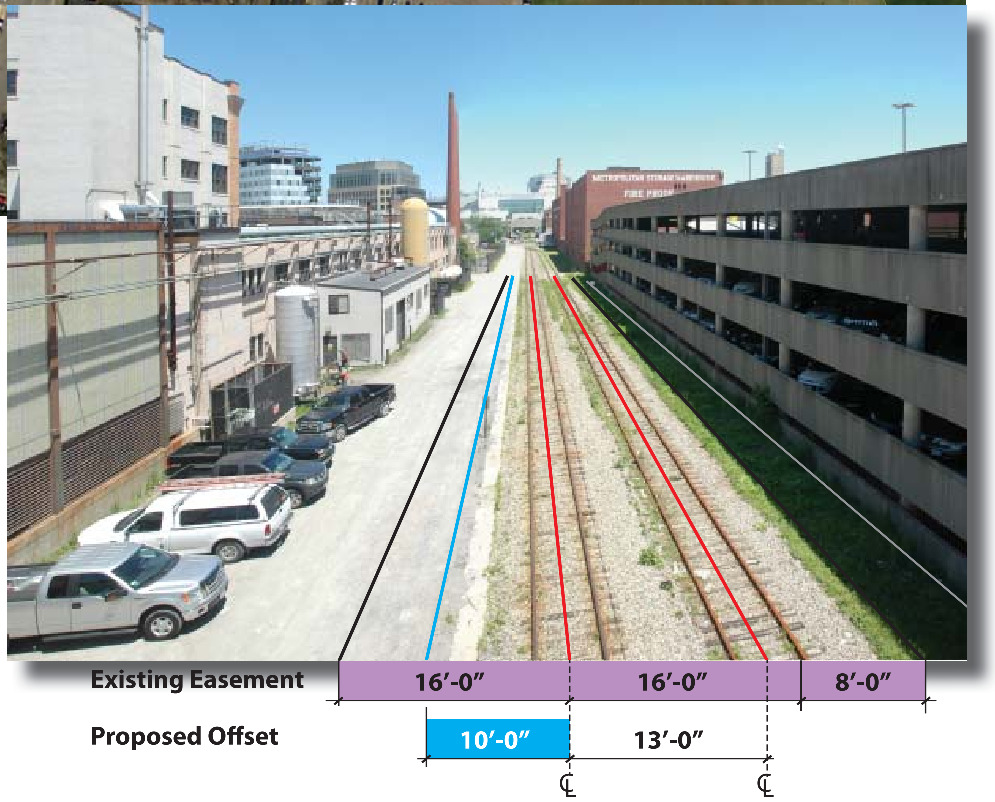
Introduction

This feasibility study was undertaken to identify and understand the potential impacts of a proposed multi-use path running along the Grand Junction Corridor on the MIT campus. The purpose of the study was to explore path routes and their effect on campus operations and development. The immediate study area is a portion of the corridor owned by MIT, which runs from just west of Pacific Street to Main Street; MIT also owns a segment of the railroad corridor adjacent to 640 Memorial Drive and the segment from Main Street to Broadway. Because path users are expected to be cyclists making regional connections, a larger study area included the rail corridor and adjacent streets between the Charles River near the BU Bridge and eastward to Broadway. Ultimately the path is intended to connect to Allston on the west and to Somerville to the north. A variety of public and private entities including the Massachusetts Department of Transportation (MassDOT), the Massachusetts Department of Conservation and Recreation (DCR), MIT, the City of Cambridge, and the Cambridge Redevelopment Authority (CRA) own segments of this larger study area, or are abutters to the corridor.

The City of Cambridge was an integral part of the study effort as the largest portion of the potential path lies within its jurisdiction. Additionally, MassDOT was consulted as it has continuing rail activity on the track. An Advisory Committee representing stakeholder groups, including City of Cambridge staff, advocacy groups and MIT staff, faculty and students, reviewed and provided input to the feasibility study at key milestones. An open house was held at the MIT Stata Center to solicit input on the project and was attended by over fifty people.

A 2006 study for the City of Cambridge prepared by Alta Planning+Design established a general concept for the corridor and identified concerns or constraints in the MIT-owned section. This study, undertaken by Kleinfelder with the assistance of McMahon Associates and Toole Design Group, takes the next step and focuses on identifying and evaluating specific campus issues including delivery and service to buildings along the corridor, utility maintenance and construction, building maintenance and construction, and future development potential. An evaluation of the Vassar Street cycle track, which runs parallel to the Grand Junction Corridor, is included as part of this study along with potential improvements identified for that facility.





Right: Existing rail easement with proposed offset

Summary

The feasibility of accommodating a multi-use path in the Grand Junction Corridor is based on three primary factors:

- The amount of space available in the corridor for both path users and service vehicles--minimizing areas of conflict;
- The frequency of path user and service vehicle trips and the ability to manage potential conflict; and
- The location and length of time for construction activities that would block segments of the corridor.

To investigate these issues, the corridor was divided into a series of segments; design concepts for the various segments were developed and evaluated to measure the fit and potential impacts to MIT's research and educational operations.

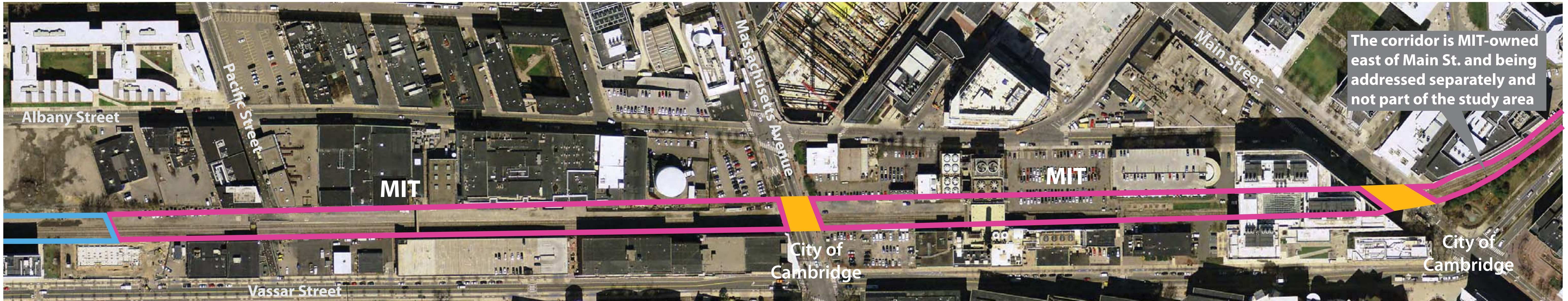
MIT's operational needs in the corridor are primarily the provision of a service drive along the back of its buildings to provide access for supplies and maintenance. The corridor currently serves vehicles accessing the buildings through a service drive system: east of Massachusetts Avenue (Mass Ave) the drive is paved, while west of Mass Ave it is largely unpaved. Maintaining the access provided by these service drives is a high priority for MIT. The western portion is plowed by MIT and used for access by the Fire Department and other emergency vehicles. *Specific existing conditions along the corridor are described on pages 4 and 5.*

Segment options on the east and west sides of Mass Ave were combined into a preferred option. This combination provides a continuous path along the north side of the track and minimizes impacts to MIT operations. This represents the best combination of the segment options, though it does not eliminate all issues, such as the use of a portion of the rail right-of-way easement for path purposes. There are several constrained locations along the route which will need to be addressed in more detail if the path concept moves ahead into the next phase of design. *The preferred option is described on pages 8 and 9.*

MIT owns the corridor between from a point roughly 250 feet west of Pacific Street and Broadway and has granted an easement to MassDOT to operate rail service. Today that operation is minimal and only consists of a few trains per day, running mostly at night with a 10 MPH speed limit. The easement east of Mass Ave is twenty feet wide, with a ten-foot offset on both the north and south sides of the centerline of the single track. West of Mass Ave the easement is forty feet wide, covering the main line plus a siding. Here the northern edge of the easement is defined by a sixteen-foot offset from the centerline of the track. The difference between the ten-foot and sixteen-foot offset is critical to the amount of space available for the path and service drive west of Mass Ave. The most viable option for the corridor is predicated on continuing the ten-foot offset from the east side over to the west side. This would require approval from MassDOT and, while there appear to be no operational constraints in applying a 10-foot offset west of Mass Ave, it is not assured. The issue has been discussed with MassDOT and they have taken it under advisement. If the existing sixteen-foot offset, rather than a ten-foot offset, remains, then the service drive and multi-use path would overlap for the entire length. This would not function as a multi-use path; it would be a shared street.

Beginning at a location roughly 250 feet west of Pacific Street and continuing to a location slightly west of the intersection of Henry Street and Waverly Street, the Grand Junction Corridor is owned by MassDOT. In this segment of the corridor there is adequate room for a multi-use path since a service drive would be unnecessary—the parcels in this segment are not accessed from the corridor. Just before the tracks pass under Memorial Drive the corridor once again reverts to MIT ownership. At this location there is not enough room for a path between the tracks and the emergency generators and other equipment along the edge of the 640 Memorial Drive parking lot, as illustrated on page 12. With that limitation, the most viable connection from the Grand Junction Corridor to the BU Bridge is along Waverly Street.

Although the path concept is viable through the MIT-owned portion of the Grand Junction Corridor between Pacific Street and Main Street under certain conditions, there remains the larger questions of connectivity, both locally



and regionally. There are significant design and feasibility issues yet to be addressed, such as crossing over the Charles River to Allston, connecting to the Somerville Community Path, and impacts of potential transit service in the corridor. The cycle track on Vassar Street can continue serving the needs of bicyclists until a path along the Grand Junction Corridor is constructed. The Vassar Street cycle track, built in 2004, was the first to be constructed in Massachusetts and one of the first in the nation. The increase in the number of cycle tracks constructed in the past ten years has provided a better understanding of their design and functionality. Drawing from this experience, potential improvements to this facility have been identified and are described on Page 15.

Assuming that the feasibility and design issues along the remainder of the corridor can be resolved and a path is constructed, corridor segments would still be subject to periodic closures for campus construction. These closures may range in duration from weeks to years. A map and description on Page 7 illustrates anticipated construction in the corridor over the next 10 years. For the periods the corridor would be closed due to construction, Vassar Street and Albany Street can serve as detour routes.

Project Cost

A conceptual level opinion of probable cost based on historical pricing data was prepared for construction of the path and related facilities, including paving for both the multi-use path and service drive, pavement markings and signage, fencing along the rail easement, lighting and police call boxes, and signal and related improvements at the Mass Ave and Main Street crossings. In the absence of detailed existing conditions and design information, allowances were included for handling of hazardous material, stormwater management, landscaping, and non-construction costs (such as design, permitting, owner's project management, etc.). Land acquisition costs are not included. All pricing was prepared in 2014 dollars. The following table breaks down the project costs by segment

Main Street to Massachusetts Avenue	$ 3,600,000
Massachusetts Avenue to Pacific Street	$ 3,300,000
Pacific Street to Henry Street	$ 6,000,000
Traffic Signal Improvements	$ 600,000
TOTAL	$13,500,000

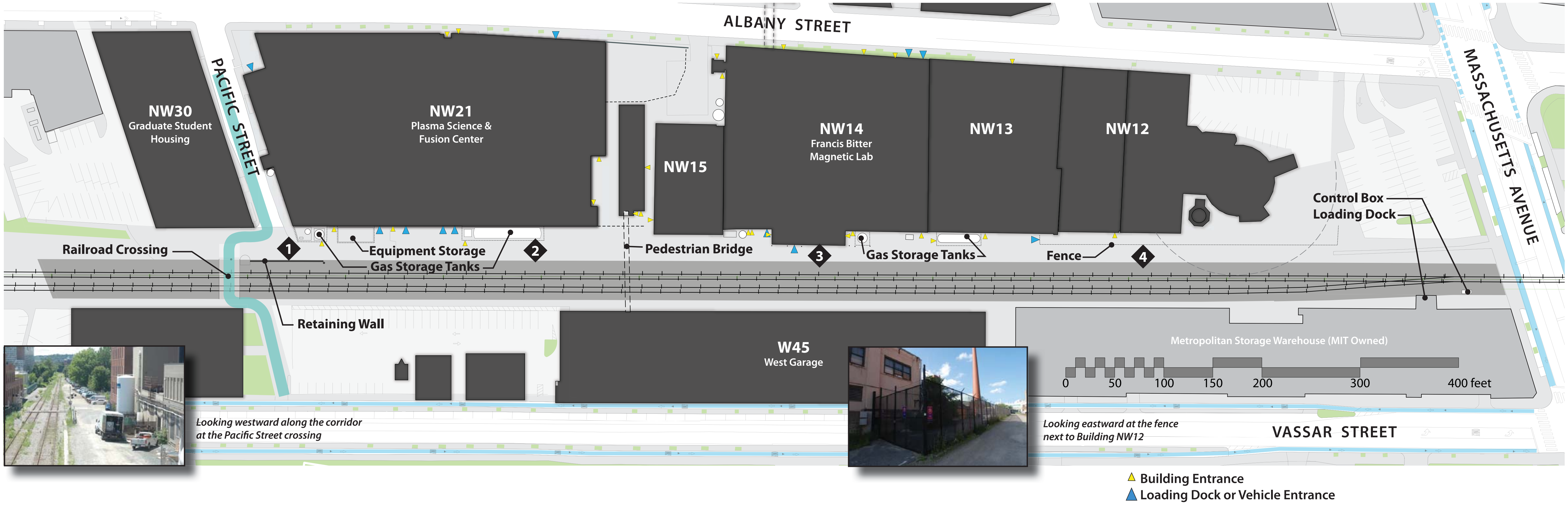
Next Steps

The Grand Junction corridor is complex with numerous owners and abutters requiring a range of activities. While this study focuses on the MIT-owned segment of the corridor, understanding the feasibility of incorporating a multi-use path along its entire length requires a cooperative effort between MassDOT, the City of Cambridge, MIT, DCR, and affected abutters. This effort would most logically be led by the City of Cambridge, although many of the issues to resolve fall within the purview of MassDOT. A more detailed discussion of next steps can be found on page 15.

In the following pages the opportunities and constraints of the corridor and the preferred options are described more fully.

Above right: Looking westward from the top of the Albany Garage

Right: Looking eastward from the West Garage pedestrian bridge



Looking westward along the corridor at the Pacific Street crossing

Looking eastward at the fence next to Building NW12

Analysis of Existing Conditions along the Corridor

The portion of the Grand Junction Corridor that is owned by MIT principally falls between Pacific Street and Main Street. The corridor is used daily as a service drive, and portions are frequently closed for maintenance or repair to buildings that back along the corridor, for new construction, and for utility maintenance and construction. To understand the needs and operations of existing building services and future construction projects, interviews were held with building managers, department heads, campus planners and others familiar with operations along the corridor. Service vehicles use the corridor multiple times a day but are infrequent, generally averaging eight to twelve trips per day on any particular segment. In addition to day-to-day delivery and service, the corridor is used for building maintenance and construction vehicles as well as fire and emergency vehicles. Depending on the scale of the building or utility repair, the corridor may need to be closed for construction – for example, the segment on the north side of the tracks adjacent to the Albany Street Garage is currently closed to accommodate utility work. New building construction will also necessitate the closing of portions of the corridor, either for construction equipment and laydown areas or in order to safely allow construction over the corridor. The construction of the addition to the co-generation plant, which will begin in 2015 and run through 2017, is a good example of building both next to and over the corridor and will require a closure for up to two years.

The railroad tracks divide the corridor leaving a service drive on either side between Main Street and Massachusetts Avenue, where there is a single track. West of Mass Ave there is an additional siding track on the south side of the main line, and this condition precludes a path or service drive on the south side of the tracks leaving room only on the north side. Buildings line the corridor almost continuously and there are numerous gas storage tanks, fences, loading docks, access doors, dumpsters and parking spaces that take up space within the corridor. This results in the available width along the corridor changing throughout its length.

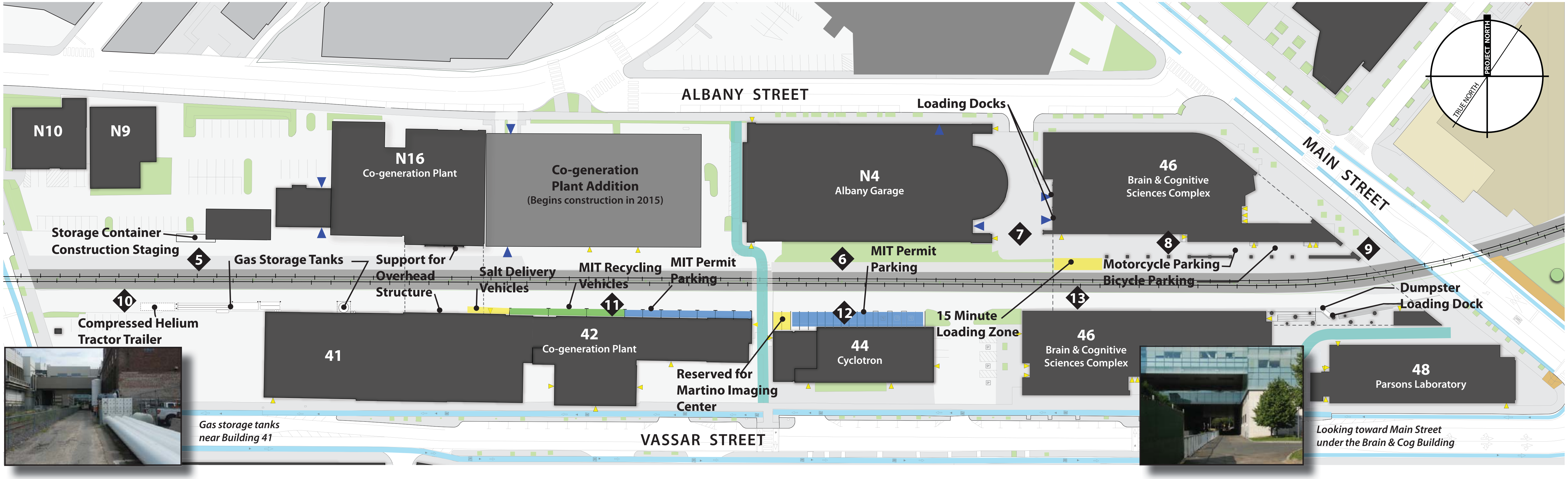
Current rail operations in the corridor are minimal and, generally, trains run at night with a ten mile-per-hour-speed limit. The corridor enables commuter rail cars to be switched between the north and south side facilities, and allows Amtrak to move Downeaster equipment from the north side to the maintenance facility in the South Bay area. Additionally, freight trains operate between the New England Produce Market in Chelsea and Beacon Park.

The feasibility of a multi-use path along this corridor is dependent on the width available. Generally, a two-way multi-use path can run side-by-side with a one-way vehicular service drive where the width is 23 feet or greater. If there is less than 23 feet available, the service drive will need to overlap onto the multi-use path. A small overlap, where the service drive encroaches onto the bicycle path while traveling in the same direction as path users, may be acceptable given the low volume of service vehicles. However, a larger overlap for a sustained length of the corridor that would cause a service vehicle to drive into the oncoming lane of the bicycle path should be avoided. If such an overlap at a pinch point is unavoidable, it should be clearly marked and bicyclists and vehicles warned of possible oncoming traffic. See Page 10 for a description of the various cross section configurations and dimensions.

Conditions could change over time as programs move from building to building or their technology needs change. For example, if the Massachusetts Avenue frontage between Vassar Street and Albany Street were developed, the site of Building 41 could be incorporated into a new development and the gas storage tanks associated with it would be removed. Future development may require service access that does not exist today.

The following locations are potential conflict points between buildings or structures in or along the corridor and the potential multi-use path; numbers refer to the points on the drawing above:

1. Near Pacific Street, the corridor is constrained at a point between the liquid nitrogen storage tank serving the Plasma Science and Fusion Center in Building NW21 and a low retaining wall supporting Pacific Street. LEVEL OF SEVERITY: HIGH
2. A tank along the back of Building NW21 causes an additional constriction. LEVEL OF SEVERITY: HIGH
3. A portion of Building NW14 protrudes into the corridor as does an adjacent gas storage tank. This feature narrows the available width, from a 10-foot offset of the rail centerline, to 23 feet, the minimum distance that a side-by-side path and service drive can fit. LEVEL OF SEVERITY: HIGH
4. Running from Building NW13 eastward to the 158 Mass Ave Parking Lot, the available width between the fence and a 10-foot rail offset narrows the corridor to 24 feet. LEVEL OF SEVERITY: MEDIUM
5. East of Massachusetts Avenue, on the north side of the tracks, there is sufficient room between Mass Ave and the co-generation plant for a standard path and service drive. Along Building N16, the co-generation plant, and the proposed addition the corridor narrows to 24 feet. LEVEL OF SEVERITY: MEDIUM


ALBANY STREET
Loading Docks
MAIN STREET
PROJECT NORTH
TRUE NORTH
N10
N9
N16
Co-generation Plant
Co-generation Plant Addition
(Begins construction in 2015)
N4
Albany Garage
46
Brain & Cognitive Sciences Complex
Storage Container
Construction Staging
5
Gas Storage Tanks
Support for Overhead Structure
Salt Delivery Vehicles
MIT Recycling Vehicles
MIT Permit Parking
6
MIT Permit Parking
7
8
Motorcycle Parking
Bicycle Parking
9
Dumpster
Loading Dock
10
Compressed Helium Tractor Trailer
11
12
13
15 Minute Loading Zone
41
42
Co-generation Plant
Reserved for Martino Imaging Center
44
Cyclotron
46
Brain & Cognitive Sciences Complex
48
Parsons Laboratory
VASSAR STREET

Gas storage tanks near Building 41

Looking toward Main Street under the Brain & Cog Building

6 Adjacent to the Albany Street Garage there is no service drive today and none is proposed. The community garden, which has been closed this past year because of underground utility work, can remain. LEVEL OF SEVERITY: LOW

7 Service access to the Brain & Cognitive Sciences (Brain & Cog) Building is primarily through the loading docks facing the Albany Street Garage. There is an area signed for 15-minute loading and temporary parking which would need to be relocated to accommodate a path in this location. LEVEL OF SEVERITY: MEDIUM

8 Under the Brain and Cog Building a row of building columns runs parallel to the corridor. Between the columns and the building, there is an access drive adjacent including space for permit motorcycle parking along with general bicycle parking. LEVEL OF SEVERITY: LOW

9 At the east end of the north side under Brain and Cog Building, there are two openings connecting the sidewalk area along Main Street with the area under the building. Each is roughly seven feet wide, measured perpendicular to the direction of travel. LEVEL OF SEVERITY: MEDIUM

10 On the south side of the tracks, adjacent to Building 41, a series of gas storage tanks narrow the corridor to twelve feet—the narrowest location along the corridor. A 5 MPH speed limit is posted. LEVEL OF SEVERITY: HIGH

11 Behind Building 42, the co-generation plant, there is parking for salt delivery trucks and three recycling trucks. Immediately eastward there are seven permit parking spaces. LEVEL OF SEVERITY: MEDIUM

12 Behind Building 44, the Cyclotron, there are two parking spaces reserved for the Martino Imaging Center and fourteen permit spaces. LEVEL OF SEVERITY: LOW

13 Under the Brain & Cog Building south of the tracks, there is seventeen feet of clearance along the existing service drive between the fence and the building wall. The loading dock for Building 48 is accessed from this location. LEVEL OF SEVERITY: HIGH

Mitigation Measures

The shared use of the corridor by bicyclists and pedestrians with service vehicles has the potential for conflict between users. Although the expected use of the corridor by service vehicles is low, there are measures that can be implemented to minimize friction. As MIT owns the corridor and oversees the services using the service drive, it will have the ability to implement, monitor and enforce the recommended controls, and will also bear any costs associated with those controls.

One-way movement of vehicles on service drive

The proposed service drive, running parallel to a multi-use path on the north side of the tracks, would only be wide enough to accommodate a single vehicle. Movement in one direction will not only increase predictability for bicyclists and pedestrians using the corridor but minimize conflicts between vehicles as well. In the segment of the corridor between Mass Ave and Pacific Street, vehicles would enter from Mass Ave and proceed west, exiting via Pacific Street. East of Mass Ave service vehicles would enter from Albany Street, between the garage and the co-generation plant addition, proceed westbound along the corridor and exit onto Mass Ave. See pages 8 and 9 for a diagram of service routes.

Off-peak delivery and service

If delivery and service vehicles can be prohibited from using the corridor during the morning peak period it would minimize friction with users of the path. While MIT has a certain amount of control over delivery and service vehicles, it is understood that compressed gas deliveries need to happen in coordination with facility needs. Any reduction in the number of delivery or service vehicles during this hour will be a benefit. The evening peak period for bicycles is after 5:00 PM and should not overlap with most MIT service and delivery vehicles.

Defined parking locations

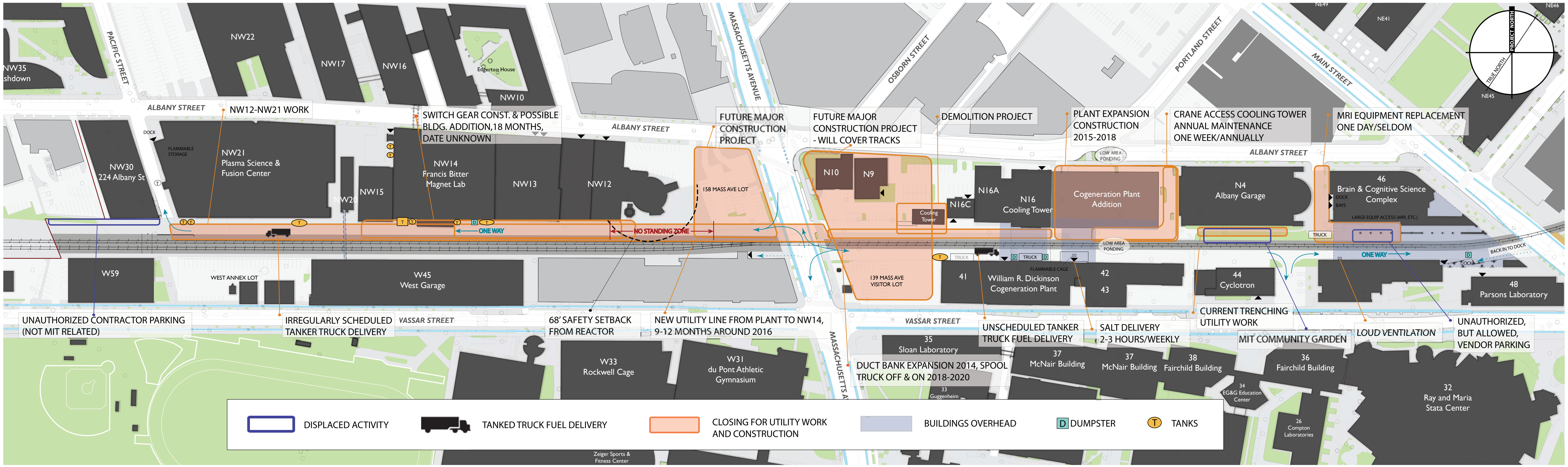
While trucks delivering liquefied gas need to park next to the storage tanks, other service vehicles traveling along the corridor will need places to park that are off the service drive. Clearly defining these locations and educating drivers about their use will help to reduce the number of vehicles parking on the service drive, and therefore reduce the need for other vehicles to maneuver around them and encroach onto the multi-use path.

Warning signs and striping

Predictability is an important factor for all users of the corridor. Locations where service and emergency vehicles overlap the path, either while traveling or maneuvering, should be clearly identified and marked with striping or warnings on the path surface. Additionally, signs should be located at service drive entries to warn away unauthorized vehicles.

Low speed limit

Service and delivery vehicles should conform to a speed limit in the corridor of not more than 10 MPH.


NW22
NW17
NW16
Edgerton House
NW10
NW35
Ashdown
PACIFIC STREET
ALBANY STREET
NW12-NW21 WORK
SWITCH GEAR CONST. & POSSIBLE BLDG. ADDITION,18 MONTHS, DATE UNKNOWN
ALBANY STREET
MASSACHUSETTS AVENUE
FUTURE MAJOR CONSTRUCTION PROJECT
FUTURE MAJOR CONSTRUCTION PROJECT - WILL COVER TRACKS
OSBORN STREET
DEMOLITION PROJECT
PORTLAND STREET
PLANT EXPANSION CONSTRUCTION 2015-2018
CRANE ACCESS COOLING TOWER ANNUAL MAINTENANCE ONE WEEK/ANNUALLY
MAIN STREET
MRI EQUIPMENT REPLACEMENT ONE DAY/SELDOM
NE49
NE41
NE46
NE45
PROJECT NORTH
TRUE NORTH
DOCK
FLAMMABLE STORAGE
NW30
224 Albany St
NW21
Plasma Science & Fusion Center
NW15
NW20
NW14
Francis Bitter Magnet Lab
NW13
NW12
158 MASS AVE LOT
N10
N9
Cooling Tower
N16A
N16C
N16
Cooling Tower
LOW AREA PONDING
Cogeneration Plant Addition
ALBANY STREET
N4
Albany Garage
46
Brain & Cognitive Science Complex
DOCK BAYS
LARGE EQUIP ACCESS (MRI, ETC.)
ONE WAY
NO STANDING ZONE
TRUCK
ONE WAY
BACK IN TO DOCK
LOW AREA PONDING
FLAMMABLE CAGE
W59
WEST ANNEX LOT
W45
West Garage
139 MASS AVE VISITOR LOT
41
William R. Dickinson Cogeneration Plant
42
43
44
Cyclotron
48
Parsons Laboratory
UNAUTHORIZED CONTRACTOR PARKING (NOT MIT RELATED)
IRREGULARLY SCHEDULED TANKER TRUCK DELIVERY
VASSAR STREET
68' SAFETY SETBACK FROM REACTOR
NEW UTILITY LINE FROM PLANT TO NW14, 9-12 MONTHS AROUND 2016
VASSAR STREET
UNSCHEDULED TANKER TRUCK FUEL DELIVERY
SALT DELIVERY 2-3 HOURS/WEEKLY
CURRENT TRENCHING UTILITY WORK
MIT COMMUNITY GARDEN
LOUD VENTILATION
UNAUTHORIZED, BUT ALLOWED, VENDOR PARKING
35
Sloan Laboratory
DUCT BANK EXPANSION 2014, SPOOL TRUCK OFF & ON 2018-2020
W33
Rockwell Cage
W31
du Pont Athletic Gymnasium
37
McNair Building
37
McNair Building
38
Fairchild Building
34
EG&G Education Center
36
Fairchild Building
32
Ray and Maria Stata Center
33
Guggenheim
26
Compton Laboratories
Zeiger Sports & Fitness Center
DISPLACED ACTIVITY
TANKED TRUCK FUEL DELIVERY
CLOSING FOR UTILITY WORK AND CONSTRUCTION
BUILDINGS OVERHEAD
D DUMPSTER
T TANKS

Construction and service activities in the corridor

Future Conditions in the Grand Junction Corridor

The environment path users travel through changes dramatically as the corridor passes from the edge of the Charles River, under Memorial Drive, curving and then straightening into the long segment from Henry Street to Pacific Street, continuing in a straight line through the MIT campus, crossing Mass Ave to another section of the MIT campus, and then curving northward at Main Street toward Somerville. The frequently changing character of the corridor adds interest for the users of the path, alternating between open segments bordered by unbuilt parcels or low buildings and denser, more enclosed segments—including some with buildings overhead. The future conditions will change over time but the corridor will continue to be a mix of different types of character.

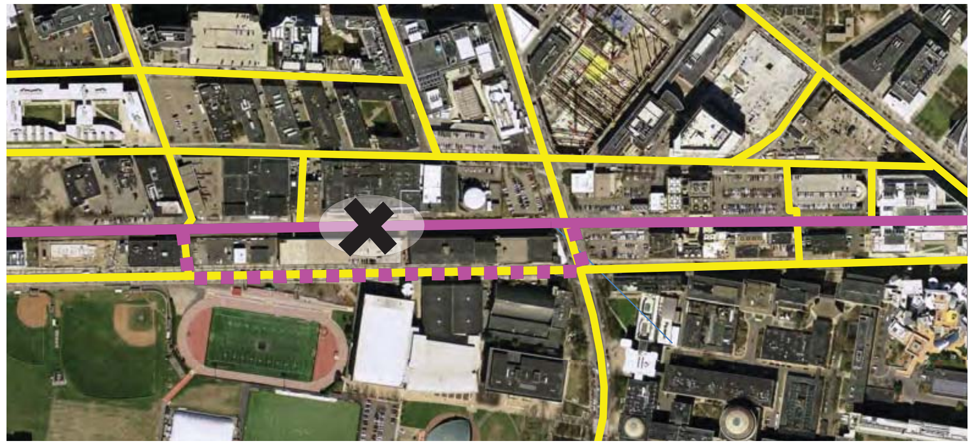
MassDOT Considerations

In addition to MIT's use of the corridor, MassDOT uses it for occasional freight rail and for shuttling commuter rail cars between the north and south rail systems. It provides the only connection to North Station from the west. MassDOT wants to maintain flexibility for various potential future transportation uses. Portions of the corridor were previously included at as part of the Urban Ring plans, and MassDOT is currently considering self-propelled diesel multiple unit train cars (DMU) for future service in the corridor that is anticipated to operate at 15-minute headways. As part of this future DMU service, a two-track configuration is preferred. This would require an extension of the second track to the east of Mass Ave and a second track through the tunnel under Memorial Drive, which would preclude a path at that location without major reconstruction. Between Mass Ave and Main Street a second track would eliminate the service drive behind the buildings fronting Vassar Street, including Building 48 and the Central Utility Plant (Building 42). A second track in this location would severely alter service to these MIT buildings, requiring substantial investment and potentially resulting in inferior service access. A multi-use path on the north side of the tracks would not be impacted by the addition of a second track on the south. Station locations for the DMU service have not been identified but, similar to the Urban Ring plans, the areas near Mass Ave and Main Street seem to be the likely candidates. A continuation of the ongoing coordination between MassDOT, the City of Cambridge and MIT is critical to address the range of issues transit service would involve.

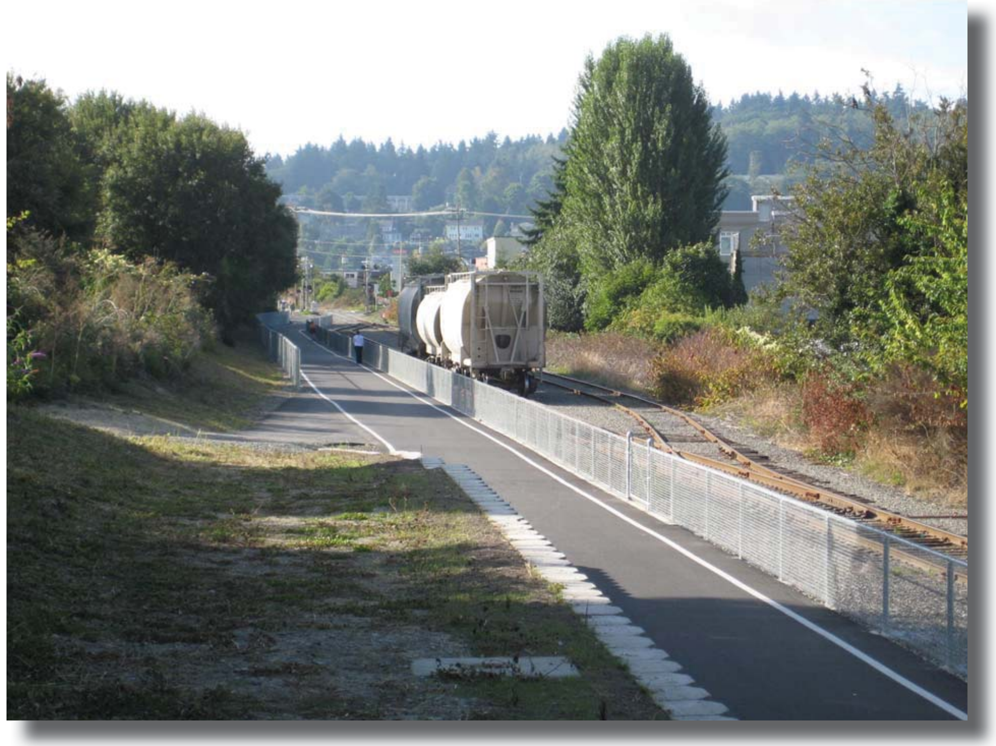
MIT Construction Activity in the Grand Junction Corridor

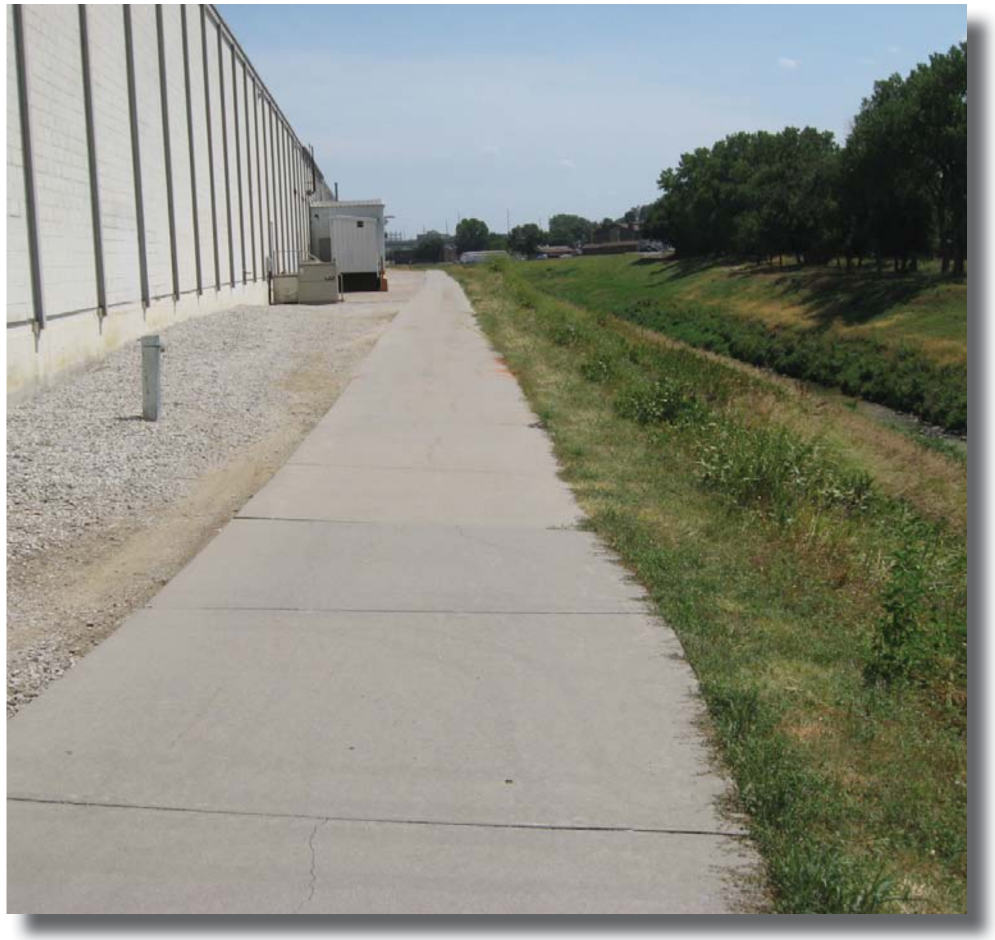
MIT owns most of the land abutting the corridor from Memorial Drive eastward to Pacific Street. From Pacific Street to Main Street, MIT owns both the corridor and all abutting land. The existing service drives running adjacent to the tracks perform a vital role in campus operations, both as a service drive for delivery and maintenance vehicles and as the primary underground utility route for the campus. MIT campus planning calls for redevelopment of existing buildings and construction of new buildings along the corridor, and for maintenance of existing and installation of new utilities. Not only will this change the character of the corridor over time but it will necessitate the closing of segments for construction. The MIT campus is in a constant state of construction as buildings, and the utilities that serve them, are built or renovated. Some projects are scheduled, such as the co-generation plant addition, while others are planned but do not have an established timetable. Construction work, although not limited to the summer, predominately occurs then, driven by the weather and MIT's reduced campus activity. Several major projects will impact the corridor:

- Beginning in 2015 and running through 2017, the co-generation plant expansion will require closure of the corridor. This project will include a bridge over the corridor providing connections to Building 42.
- The corridor between Mass Ave and Building N16 will shortly become the home of construction trailers and equipment, and is the laydown space for a campus construction in that area.
- A new utility line from the cogeneration plant to Building NW14, west of Mass Ave, will close the corridor for up to twelve months in 2016.
- Scheduled to begin in the summer of 2021, Building 42 will begin a one to two year equipment replacement program.



When construction closes a segment of the corridor, Vassar Street is a natural detour

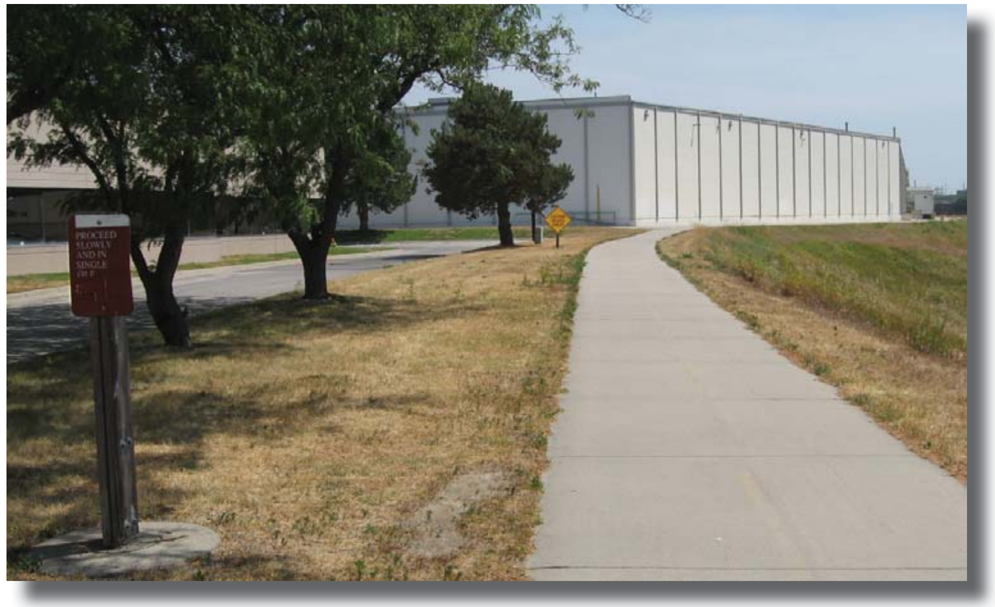




Far left: The Burke-Gilman Trail in Seattle, Washington is separated from the tracks by a low chain link fence.

Left: A shared bicycle and vehicle path along the Nebraska Furniture Mart is part of the Keystone Trail in Omaha. Trucks serving the warehouse use the trail for access. To date there have been no reports of incidents between trail users and vehicles.

Below: Warning signs along the path alert cyclists. The front sign states "Proceed slowly and in single file" and the warning sign states "Caution trucks ahead."



- The frontage on the east side of Mass Ave between Albany and Vassar streets is a prime development location and a building on this site would span over the corridor—similar to the Brain and Cog building at the other end of the block. Construction here would also require closure of the corridor.

Since a multi-use path is unlikely to be built in the next few years, some of these projects would not have an impact, but some level of construction activity in the corridor will continue into the future.

The plan shown on the opposite page illustrates known, planned, and anticipated construction activity in and around the corridor over the next ten years. The MIT campus must be responsive to the constantly changing needs of higher education and research. Activity in the next three to five years is fairly certain, however, moving further into the future, specific plans become more ambiguous and must be adaptable based on changing technology as well as grants, private donations, and annual budgets, utility infrastructure needs and maintenance requirements. In addition to major construction projects, ongoing building maintenance and operations may require periodic closures of the corridor.

The Larger Network

A multi-use path along the Grand Junction Corridor should be conceived of as part of a larger network of on- and off-street paths making both local and regional connections. Regional connections would ultimately connect with Allston to the west and Somerville to the north; and MIT and the Cambridgeport neighborhood will be both an origin and destination for many path users. Existing rail crossings at Main Street, at the west end of the Albany Street Garage, at Massachusetts Avenue, Pacific Street, and Fort Washington Park will help integrate a path along the Grand Junction Corridor with the larger neighborhood network.

In addition to network connections, these crossings will allow for path detours to Vassar Street or Albany Street when a segment of the corridor needs to be closed for construction or maintenance. Vassar Street already has a cycle track and is a good detour route. For Albany Street to be used as a bicycle detour, on-street parking in the affected area would need to be relocated for the duration of the detour.

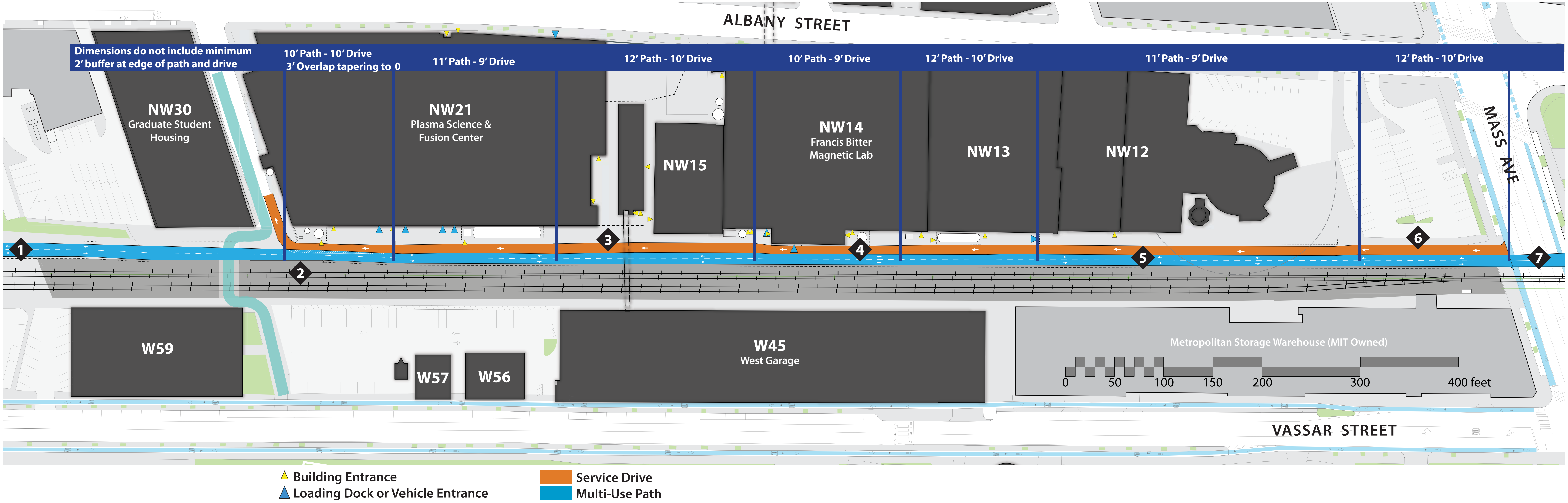
Trail Examples in Other Locations

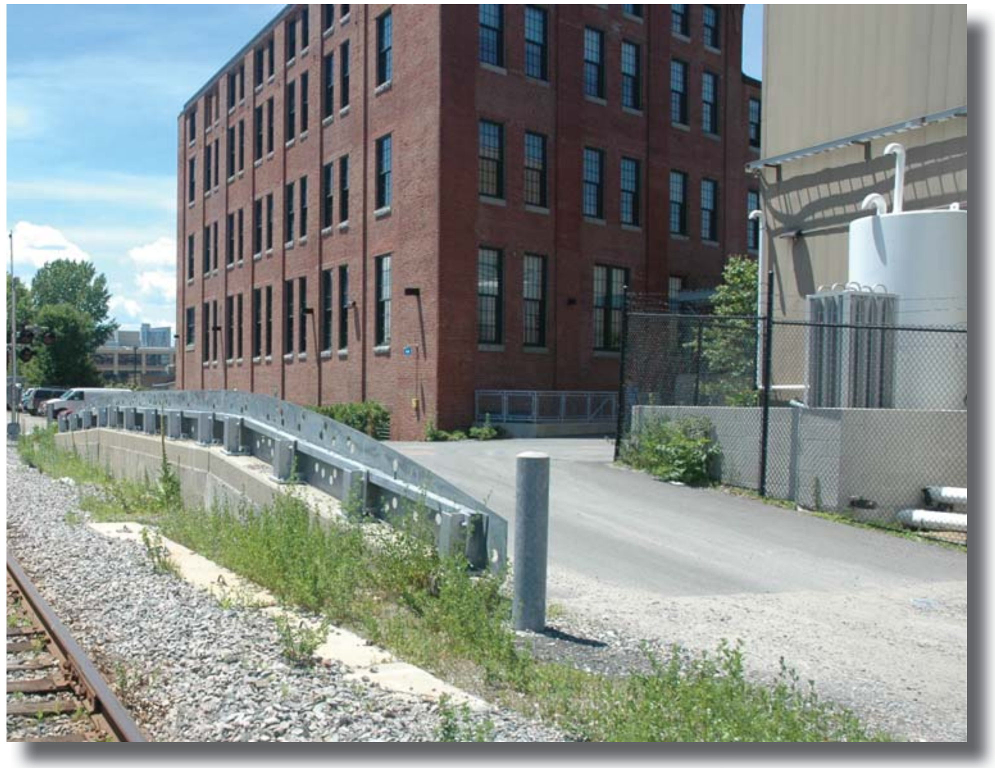
While this feasibility study does not include a detailed design of the path, there are examples from other locations that can give a sense of the character that path users would experience traveling along the corridor. Because industrial uses were frequently constructed along rail corridors to take advantage of rail delivery, paths that follow the track also go through industrial areas. The Grand Junction Corridor is a good example of an industrial corridor that is slowly transforming as industrial uses move away and the buildings that housed them are rehabilitated for other purposes. While the industrial uses are gone the architecture of the buildings is an important aspect of the corridor's character. As new buildings are constructed and existing buildings are renovated, the character of the corridor will change.

Looking at examples in other locations can help give a sense of what a path user will experience along the Grand Junction Corridor. There are several examples of bicycle paths mixed with service drives and bicycle trails along rail corridors—although the Grand Junction corridor appears to be fairly unique in its mix of uses. The Keystone Trail, in Omaha, runs adjacent to the Nebraska Furniture Mart warehouse. Trucks serving the warehouse use the trail for access to load and unload material. Unlike the proposed path for the Grand Junction Corridor, trucks and bicycles share the same pavement. The area of truck and trail interaction is approximately one-third of a mile in length. Signs along the trail warn bicyclists of trucks ahead, and also trucks that they are entering a bicycle facility. To date there have been no problems or reports of incidents between trail users and vehicles.

Most rail-with-trail facilities are located along tracks with a higher volume of trains that run at higher speeds than on the Grand Junction. The Burke-Gilman trail in Seattle is a multi-use path that runs adjacent to a rail corridor and is separated by a fence similar to the one along the Grand Junction Corridor between Mass Ave and Main Street.

A multi-use path running along the Grand Junction Corridor will share some characteristics of the examples cited above but will remain a unique combination of open and enclosed, covered and uncovered, and with and without a service drive. It will continue to change and evolve along its length providing a chronology of industrial and institutional urban form.


ALBANY STREET
Dimensions do not include minimum 2' buffer at edge of path and drive
10' Path - 10' Drive
3' Overlap tapering to 0
11' Path - 9' Drive
12' Path - 10' Drive
10' Path - 9' Drive
12' Path - 10' Drive
11' Path - 9' Drive
12' Path - 10' Drive
NW30
Graduate Student Housing
NW21
Plasma Science & Fusion Center
NW15
NW14
Francis Bitter Magnetic Lab
NW13
NW12
MASS AVE
1
2
3
4
5
6
7
W59
W57
W56
W45
West Garage
Metropolitan Storage Warehouse (MIT Owned)
0
50
100
150
200
300
400 feet
VASSAR STREET
Building Entrance
Loading Dock or Vehicle Entrance
Service Drive
Multi-Use Path



The retaining wall and gas storage enclosure limit the available width near Pacific Street

Description of the Preferred Options

Multiple options were developed and evaluated for the segments on either side of Mass Ave: two options between Mass Ave and Pacific Street and six options between Mass Ave and Main Street. The preferred options (Options A and C in the study) are illustrated here. They provide a continuous path on the north side of the railroad tracks, paired with a one-way, westbound service drive, and path crossings at Mass Ave and Main Street. The width of the path and service drive varies depending on the available width of the corridor. There are two exceptions to the typical condition, one at each end of the study area. In a narrow length of the corridor near Pacific Street, adjacent to Building NW21, the service drive and multi-use path overlap; and under the Brain and Cog Building near Main Street the path is split into separate eastbound and westbound lanes for approximately 150 feet. Option highlights are described below.

1. The MIT-owned segment of the corridor extends approximately 250 feet westward past Pacific Street. Beyond this point the corridor is owned by MassDOT and is wide enough to accommodate a path width of fourteen feet with three foot buffers.

2. Between the retaining wall and the gas storage tank serving Building NW21, the corridor narrows to approximately 20 feet and requires the service drive to overlap the path. The overhang of trucks making a turn onto Pacific Street would exacerbate this condition, however, the low volume of service vehicle traffic will keep the number of potential conflicts to a minimum.

3. The corridor is sufficiently wide in the area near the pedestrian bridge for the preferred 26-foot configuration for the path and service drive with additional space next to the building for service vehicle parking. See Page 10 for discussion of typical cross section configurations and dimensions.

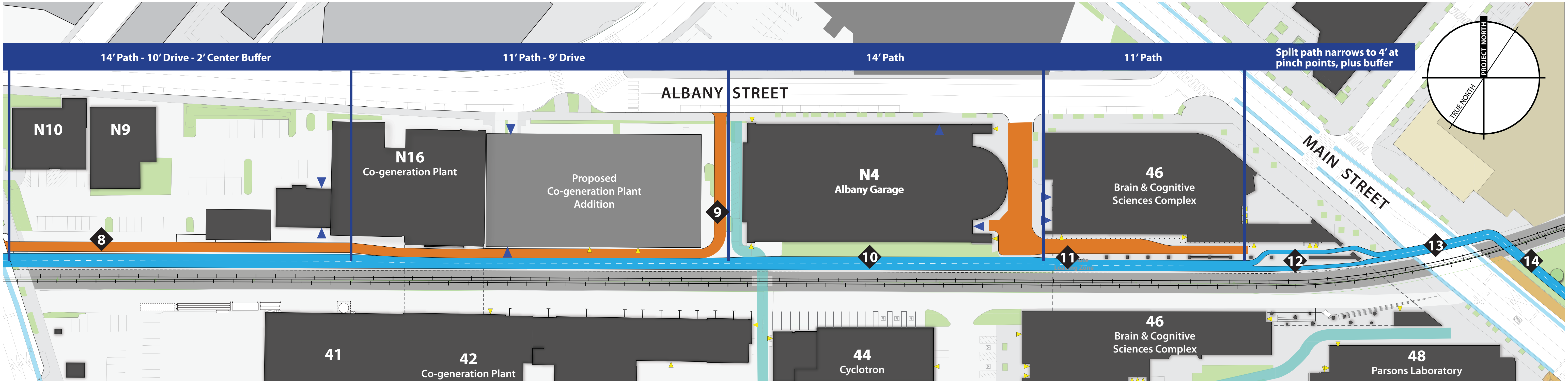
4. The one-story addition to Building NW14 constricts the corridor requiring the use of the minimal side-by-side cross section configuration of 23 feet.

5. The available width of the corridor along the fence adjacent to Buildings NW12 and NW13 is approximately 24 feet and can accommodate a side-by-side configuration.

6. Adjacent to the 158 Mass Ave lot, the path and service drive widen to fit the 26-foot configuration approaching Mass Ave. The parking use on this site permits some flexibility but a future building here would establish a hard boundary. A path would be accommodated in any building design.

7. The path crosses Mass Ave adjacent to the tracks. Traffic signals for this crossing would be coordinated with those at Albany Street and Vassar Street. See Page 11 for a more detailed discussion of the crossing.

8. Immediately east of Mass Ave there is enough width for a side-by-side drive and path with a buffer between them. Future development of this prime site is likely and the buffer area could be adjusted to accommodate a row of columns similar to the configuration under the Brain &


14' Path - 10' Drive - 2' Center Buffer
11' Path - 9' Drive
14' Path
11' Path
Split path narrows to 4' at pinch points, plus buffer
PROJECT NORTH
TRUE NORTH
ALBANY STREET
MAIN STREET
VASSAR STREET
N10
N9
N16
Co-generation Plant
Proposed
Co-generation Plant
Addition
N4
Albany Garage
46
Brain & Cognitive
Sciences Complex
41
42
Co-generation Plant
44
Cyclotron
48
Parsons Laboratory
8
9
10
11
12
13
14

Cog Building at the eastern end of the block. At the co-generation plant, adjacent to Building N16, the available space narrows to approximately 23 feet and continues along the proposed plant addition at a width of approximately 24 feet.

9 The service drive would enter the corridor from Albany Street between the co-generation plant addition and the Albany Street Garage. The service drive would run parallel to a pedestrian and bicycle path that crosses the tracks at this location, connecting Albany Street and Vassar Street. This space provides an opportunity for a future plaza or open space area connecting to the path—particularly if Building 44 is redeveloped and additional space on the south side of the tracks becomes available as well.

10 Adjacent to the Albany Street Garage there is no service drive today and none is currently proposed for future conditions. Although this area is currently under construction for utility work, it was the location of a community garden and that use can be accommodated in the future with a path, as long as there is no service drive in the area.

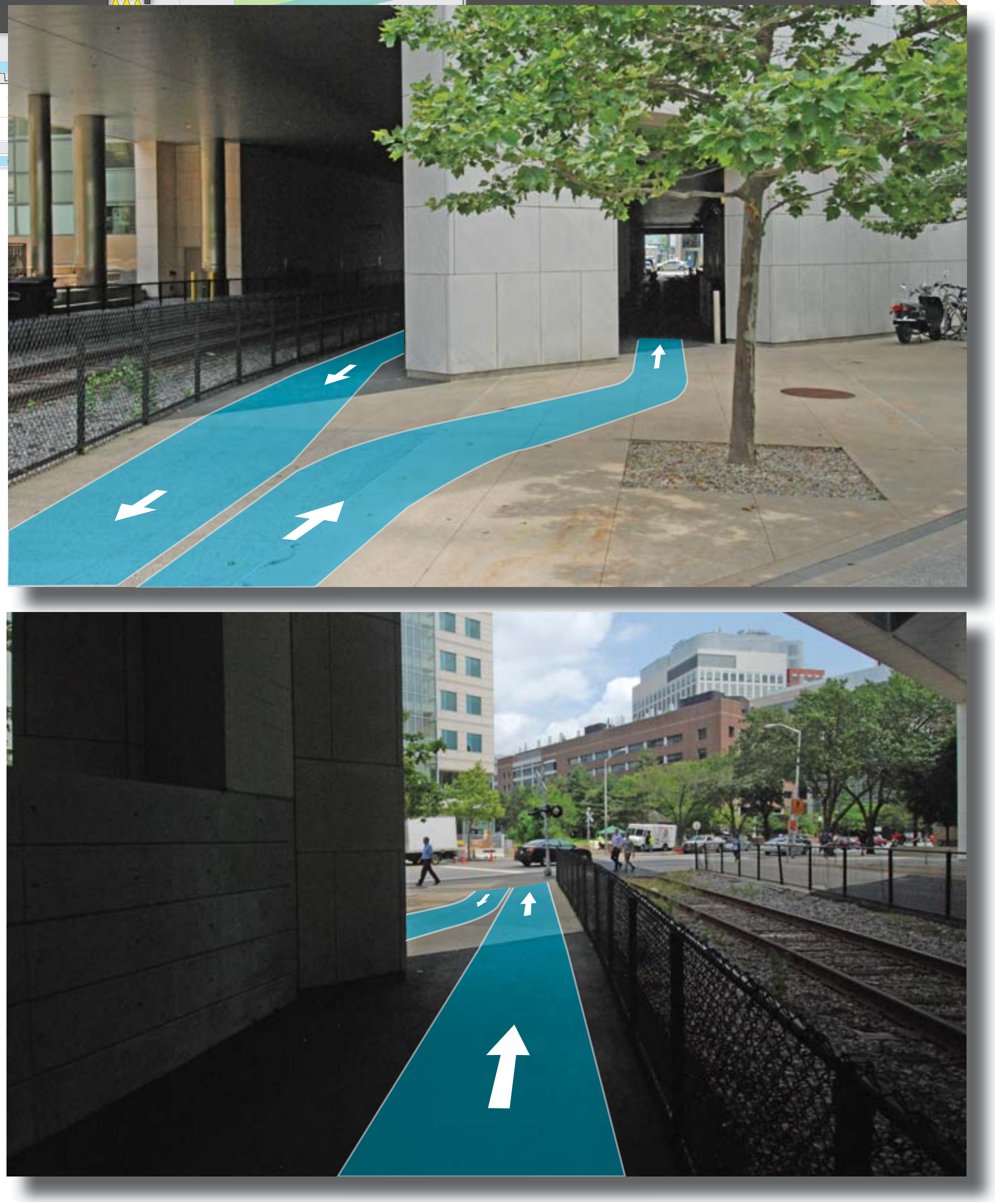
11 At the south end of the entry drive to the garage and loading docks for the Brain and Cog Building there are spaces for 15-minute convenience parking for delivery vehicles and these will need to be relocated.

12 Under the Brain and Cog Building the path stays between the building columns and the fence running along the edge of the track easement. The path splits into separate eastbound and westbound lanes for approximately 150 feet near Main Street in order to enter and exit through the openings at the building edge. The path then comes together again before crossing Main Street.

13 The path crosses Main Street on the north side of the tracks and signalization is coordinated with the intersection at Main Street and Vassar Street. See Page 11 for a more detailed discussion of the crossing.

14 East of Main Street the path turns southward to connect with a planned off-street path along the north side of Galileo Galilei Way. The exact location of this path on the east side of Main Street needs to be studied further to avoid conflicts with the existing steam line access hatches.

The preferred option between Mass Ave and Pacific Street is predicated on the use of a portion of the MassDOT easement. While this appears to have no impact on the rail operation—and, in fact, would be the same condition that exists east of Mass Ave—a confirmation from MassDOT would be necessary before an actual design is developed. If the use of the easement is not possible, the path and service drive would overlap continuously along the entire length of this segment and would be treated as a shared street. A fence would be constructed between the path and the rail operating envelope west of Mass Ave, similar to what already exists east of Mass Ave.

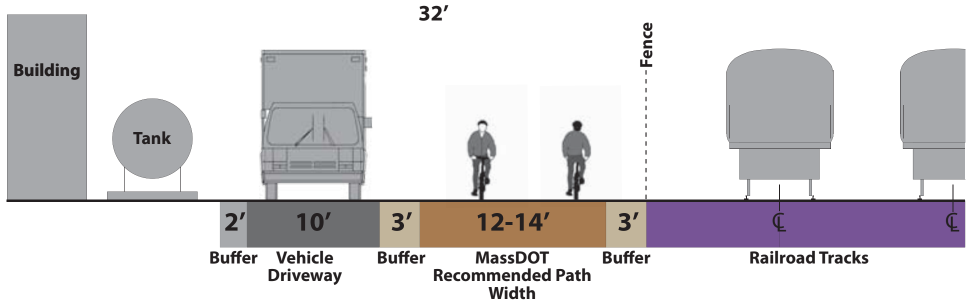


The narrow opening under the Brain & Cognitive Sciences Complex require the path to split into a one-way pair

Typical Cross Sections

To understand how space in the corridor is allocated at different locations with various widths, cross sections of typical conditions were drawn. These are described below.

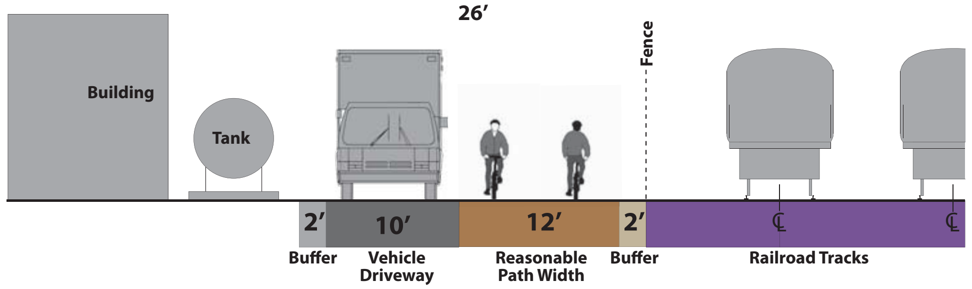
Recommended MassDOT multi-use path plus service drive


32′
Building
Tank
Fence
2′
10′
3′
12-14′
3′
Buffer
Vehicle Driveway
Buffer
MassDOT Recommended Path Width
Buffer
Railroad Tracks

MassDOT recommends a 12 to 14-foot wide multi-use path with 3-foot buffers on either side clear of any vertical obstructions. A 12 to 14-foot width path provides enough space for two bicycles to travel in opposite directions with a third bicycle passing one or the other. This width also provides bicyclists space to pass walkers and provides room for in-line skaters who need more room for side-to-side movement. The width is not necessary because of a high volume of users but rather to accommodate users moving at different speeds.

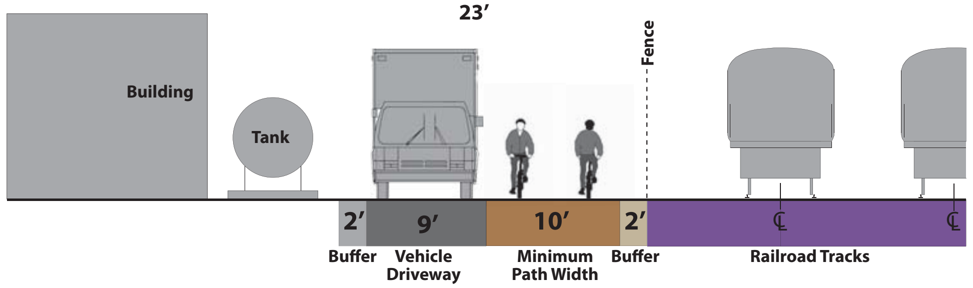
A one-way service drive would run next to the multi-use path with the drive aligned against the path going in the same direction. The service drive would be ten feet wide with a two foot buffer where it is adjacent to buildings, gas storage tanks, or other obstructions. The combined width for this cross-section is 32 feet. There are limited locations in the corridor that can accommodate this cross-section.

Typical width multi-use path plus service drive


26′
Building
Tank
Fence
2′
10′
12′
2′
Buffer
Vehicle Driveway
Reasonable Path Width
Buffer
Railroad Tracks

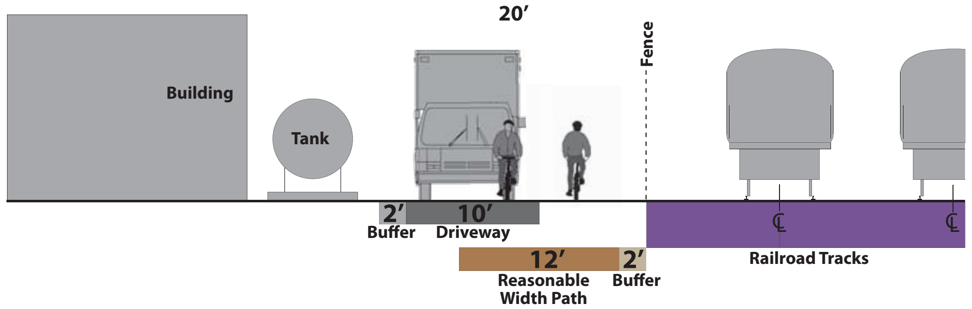
A more reasonable width for a multi-use path with a service drive that meets the constraints of this portion of the Grand Junction Corridor is 26 feet. This would be composed of a 12-foot multi-use path with a 2-foot buffer along a fence separating the rail easement. There would be no buffer between the path and the service drive and the service drive would remain at 10 feet wide with a 2-foot buffer against the buildings.

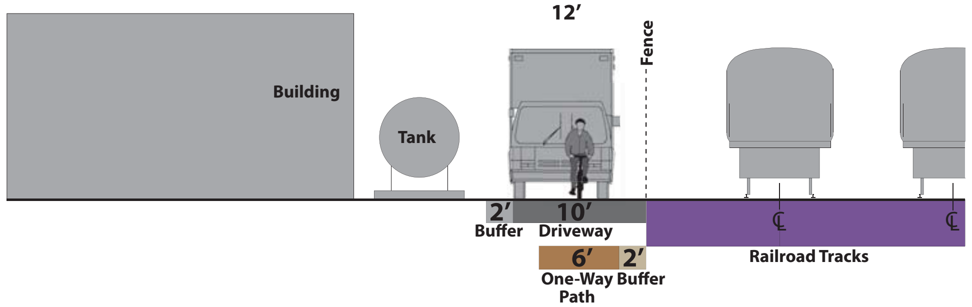
Minimal side-by-side cross section


23′
Building
Tank
Fence
2′
9′
10′
2′
Buffer
Vehicle Driveway
Minimum Path Width
Buffer
Railroad Tracks

At many locations in the corridor the width falls below 26 feet to 23 or 24 feet. Rather than have the service drive overlapping the multi-use path, a narrower cross section was developed for these locations. A viable cross section can be as narrow as 23 feet and would consist of a 2-foot buffer along the rail fence, a 10-foot multi-use path, a 9-foot service drive and a 2-foot buffer.

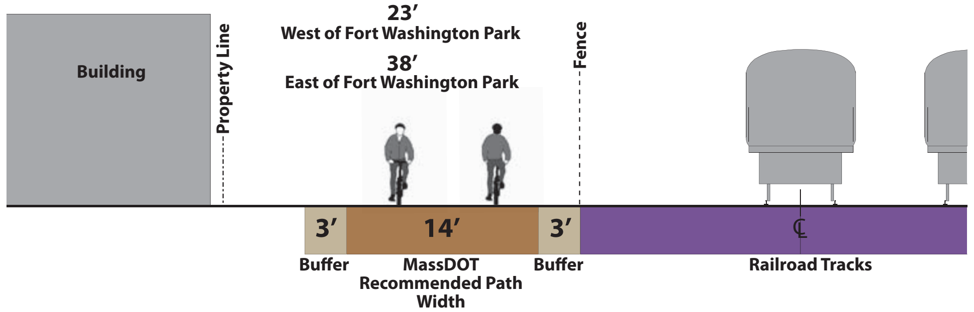
Overlapping cross sections


20′
Building
Tank
Fence
2′
10′
Buffer
Driveway
12′
2′
Reasonable Width Path
Buffer
Railroad Tracks


12′
Building
Tank
Fence
2′
10′
Buffer
Driveway
6′
2′
One-Way Path
Buffer
Railroad Tracks

Once the available width falls below 23 feet, the service drive overlaps with the multi-use path. In the preferred option this condition only occurs in one location at Pacific Street for approximately 100 feet. This pinch point can be treated as a shared street. There are precedents for mixing slow-moving vehicles with bicycles and pedestrians, although it is a less desirable condition. The Pacific Street alley, directly adjacent to this location, is currently shared by service vehicles, bicycles and pedestrians.

Cross Section at MassDOT owned segment


23′
West of Fort Washington Park
38′
East of Fort Washington Park
Building
Property Line
Fence
3′
14′
3′
Buffer
MassDOT Recommended Path Width
Buffer
Railroad Tracks

West of Pacific Street, the existing conditions within the corridor change, permitting a wider path section. The buildings along this segment are not serviced from the rail corridor and are not expected to be in the future, so there is no need to provide a service drive. Any access required to service the path or its components will occur on the path itself. Also, the corridor widens slightly as there used to be two or three sidings on the north side of the mainline track. While some sections of these sidings remain, most have been removed. As a result, the MassDOT recommended section of 12 to 14 feet for the path (two 6 to 7 foot lanes) plus 3 foot wide buffers on both sides can be accommodated to approximately Henry Street. Beyond that location, the current conditions of track alignment, edge uses, and property ownership narrow the available corridor so that a multi-use pathway cannot be accommodated.

Volumes for Service Vehicles, Bicycles, and Pedestrians

Space available in the corridor is one factor for the feasibility of a multi-use path in the corridor. Another is the anticipated volume of users. Based on interviews with MIT personnel, we can estimate the number of service vehicles expected on the corridor. This varies by corridor segment and is a relatively low number, averaging about one vehicle per hour during the normal work day. On weekends, the volume of service vehicles is minimal.

Pacific to Mass Ave	8 – 12 per day
Mass Ave to Main Street (on the south side)	6 – 10 per day
Mass Ave to Main Street (on the north side)	6 – 8 per day

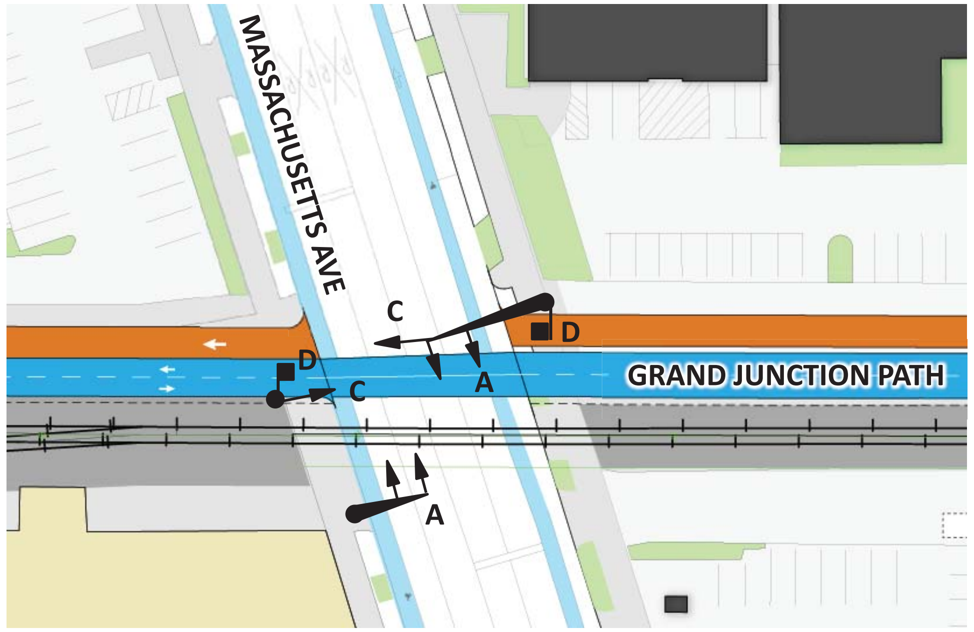
Expected bicycle volumes are difficult to assess since they would include a significant number of regional trips that are not possible along the corridor today. As a reasonable estimate, the peak hour volumes for bicycles on Vassar Street were used.

Peak Hour Trips	East Bound	West Bound	Combined Total	Bicycles per Minute
West of Mass Ave	71	33	104	1.7
East of Mass Ave	275	188	463	7.7

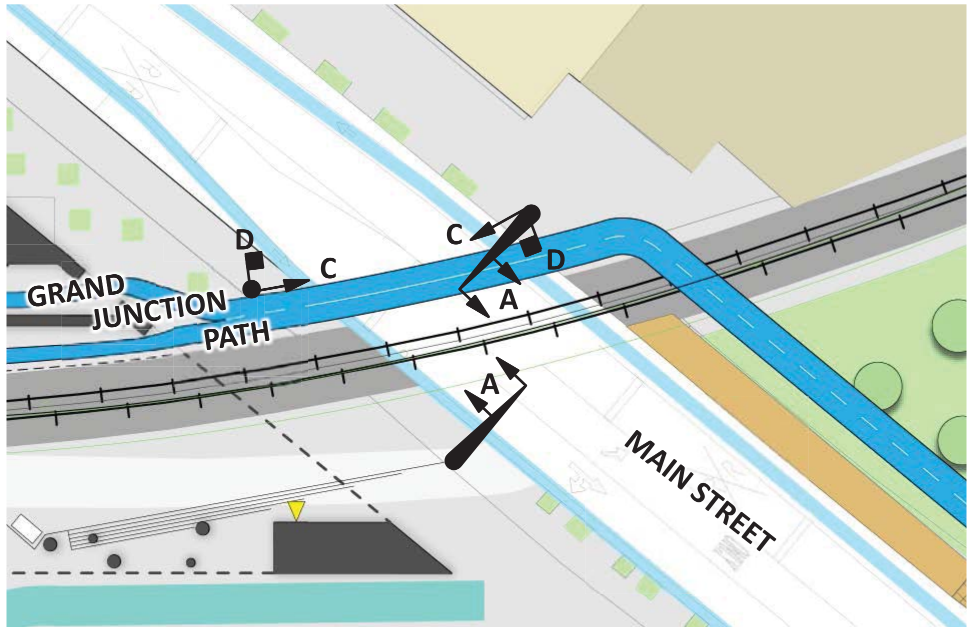
Because the Grand Junction Corridor will be a recreational route as well as a commuter route, heavy use on weekends should be expected. Based on the Boston Region MPO Bicycle/Pedestrian Count Database, sample volumes on other regional facilities are shown below.

Facility	Weekday 7-9 AM	Weekday 5-7 PM	Weekend Noon-2 PM
Southwest Corridor @ Heath Street (Weekday 09/13/2012 & Weekend 09/15/2012)	443	550	175
Minuteman @ Lexington Center (Weekday 05/07/2014 & Weekend 05/10/2014)	195	188	232

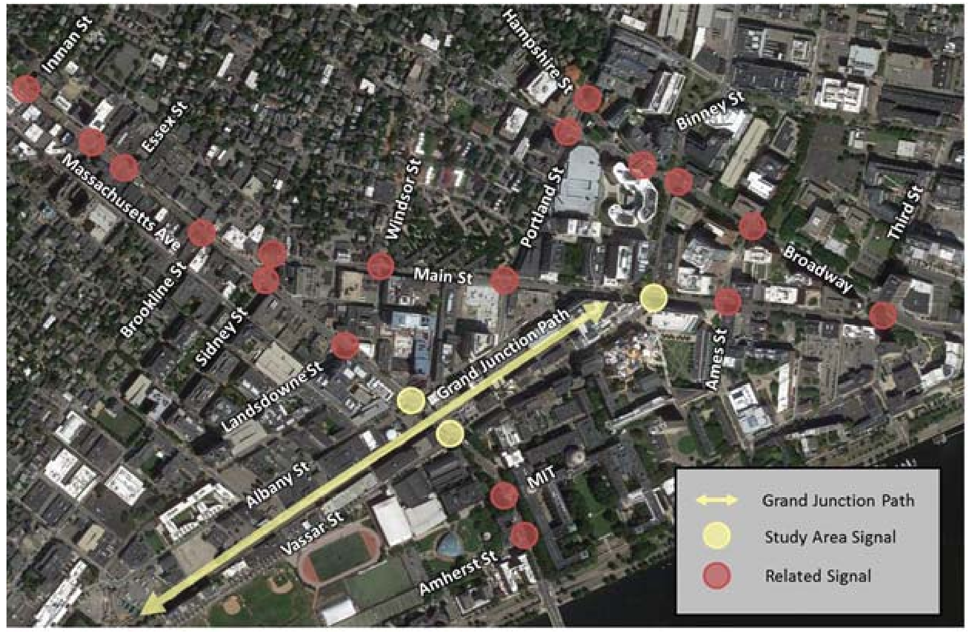
Expected pedestrian volumes are more difficult to assess. To the casual pedestrian, few destinations may be directly accessible along the Grand Junction, in which case adjacent streets may be preferred. However, the Grand Junction path may be expected to be the path of choice for runners and other recreational users because of its flow and safety from neighboring traffic. The anticipated low volumes of vehicles will minimize friction with bicyclists and pedestrians.



Proposed signal placement on Massachusetts Avenue



Proposed signal placement on Main Street



Signalized intersections in and around the study area

Crossings at Massachusetts Avenue and Main Street

The addition of the multi-use path crossings at Massachusetts Avenue and Main Street will create a complex signalization to provide a safe method of allowing pedestrians and bicyclists to cross these busy urban streets at mid-block locations while minimizing delay for all users. As part of this feasibility study, several different options were investigated to provide the crossings based on different approaches to the signal timing and coordination between the multi-use path signals and the vehicular signals for the adjacent intersections.

The following alternatives outline the different approaches that were considered related to signal timing, phasing, and overall operation; some of these may be used in combination:

1. Added signal for crossing

The simplest solution would be to insert a pre-timed signal within the existing 90-second cycle length and provide minor timing adjustments to the adjacent existing traffic signals.

Pros: Very good thru coordination and queue management for vehicles.

Cons: Delay incurred by the path users similar to that of a regular crossing without actuation.

2. Pathway Signal Detection

One way to limit the delay incurred by path users would be to provide detection for the path crossing phase. Signal detection would stop vehicular traffic on Massachusetts Avenue or Main Street when activated.

Pros: Potentially reduce waiting times for pedestrians and bicyclists to cross (depending on operational and timing strategies).

Cons: Frequent detection of the path crossing phase would more rapidly and significantly impact vehicular operations along Massachusetts Avenue or Main Street, potentially resulting in vehicle queue spillback into the adjacent intersections. The City of Cambridge has expressed that the implementation of detection on the path is not currently preferred.

3. Half-Cycle Length for Path Crossing

Providing a 45-second cycle at the proposed path crossing signals at Main Street and Massachusetts Avenue – which is half of the 90-second cycle currently in place – allows for the continued use of coordinated, pre-timed traffic signals under existing operational conditions.

Pros: Limits the delay incurred by the path users. Minimal impact to Main Street vehicular operations.

Cons: Potential for vehicular queues to exceed the storage available along Massachusetts Avenue. The City of Cambridge has expressed that the implementation of a shortened cycle is not currently preferred.

4. Shortened System Cycle Length

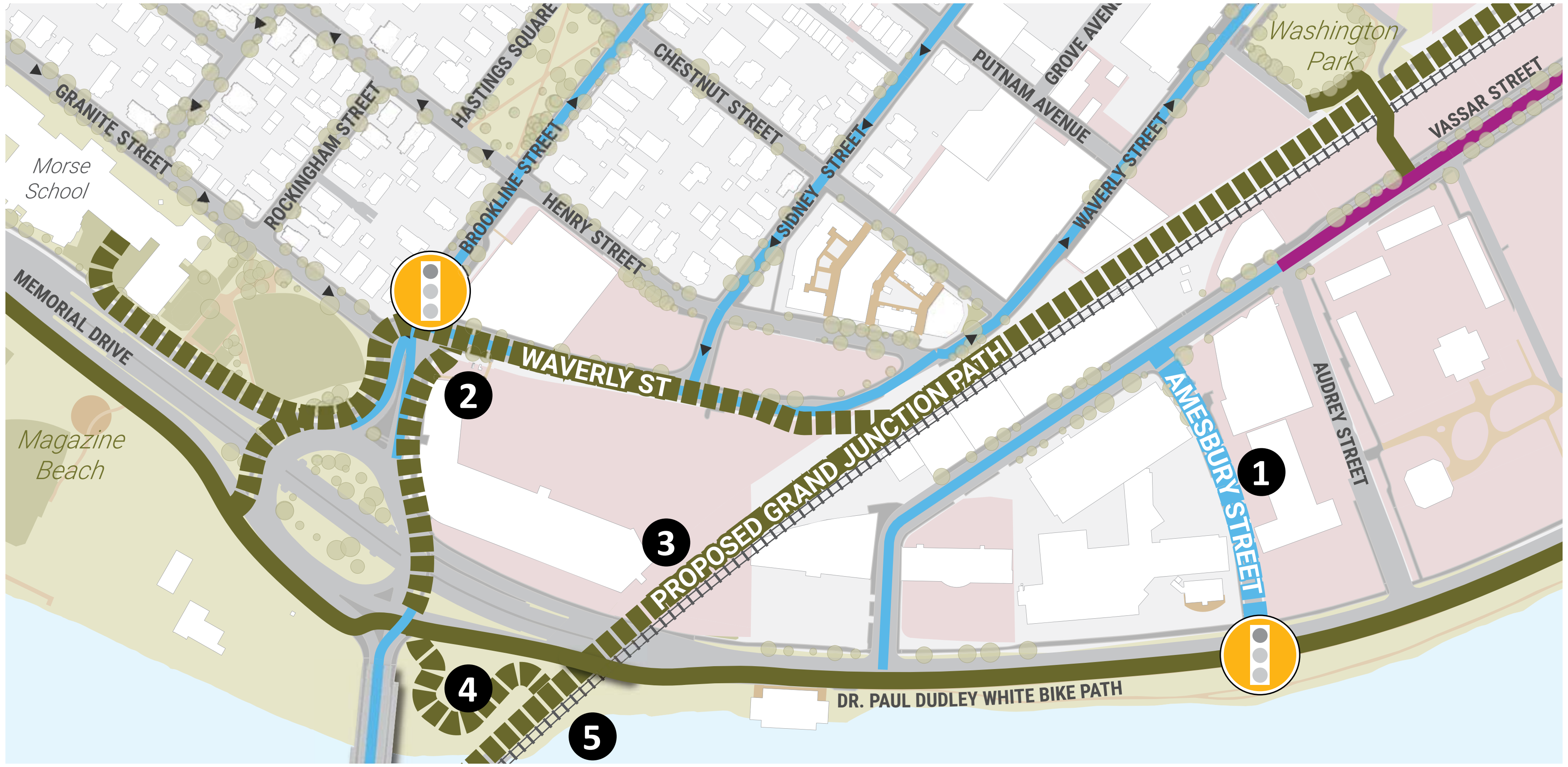
The use of a uniform, shortened cycle length allows the traffic signals at the path crossings and adjacent intersections to the path crossings to be pre-timed and placed in coordination.

Pros: Provides the most efficient operations for vehicular traffic along Main Street and Massachusetts Avenue, while minimizing delay to path users.

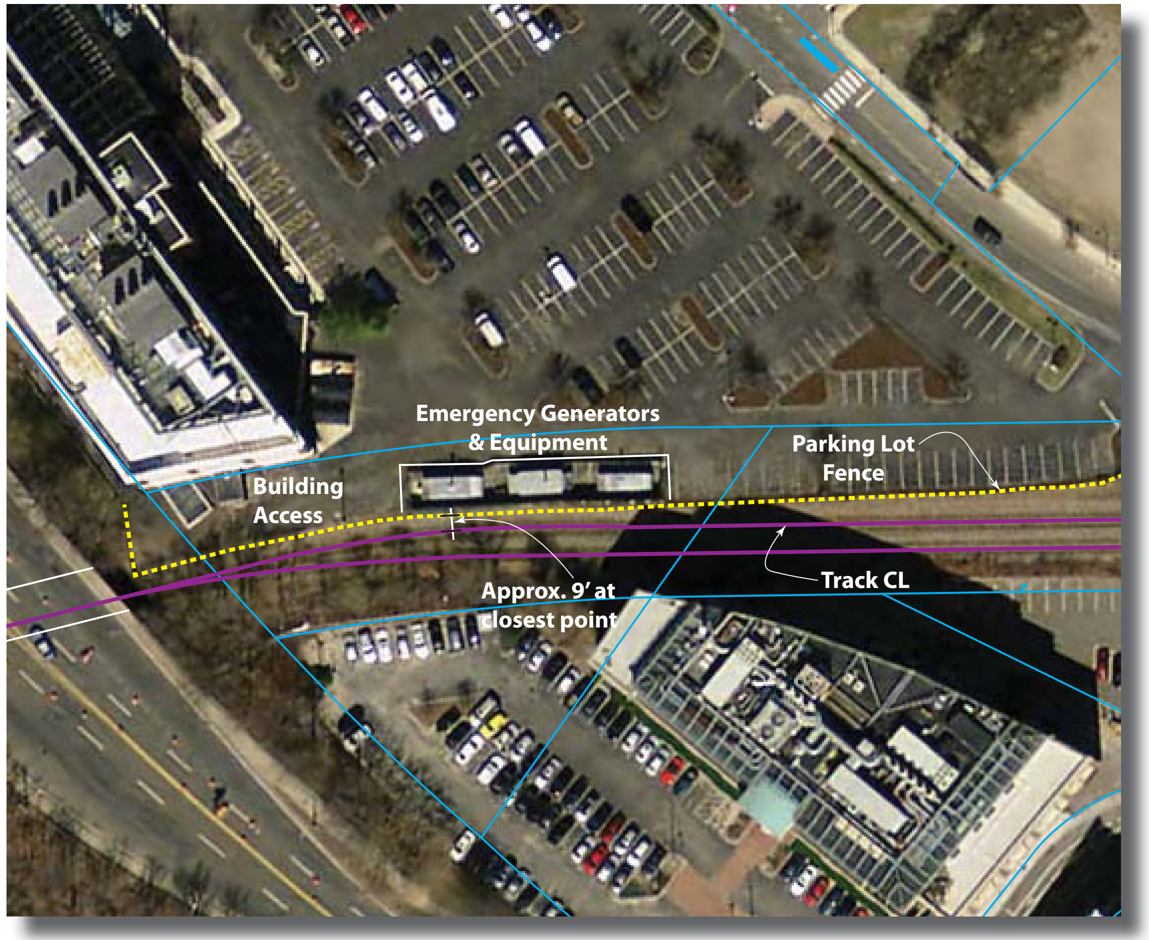
Cons: Up to twenty nearby traffic signals in the area are pre-timed and coordinated with the traffic signals adjacent to the proposed path crossing and would need to be re-timed to work with the path crossings and adjacent signals. The City of Cambridge has expressed that the implementation of a shortened cycle is not currently preferred.

The two path crossings at Massachusetts Avenue and Main Street can be signalized to allow for safe and efficient operations for all roadway and path users. Although the intersections along Massachusetts Avenue and Main Street are closely spaced, it will be possible to successfully signalize the Grand Junction path crossings. Coordination with the City of Cambridge will be necessary to allow the path crossing signals to work in conjunction with adjacent existing signals and railroad crossings. In addition to the installation of two new signals at the path crossings, signal equipment upgrades (such as signal heads, signal controllers and railroad gates), timing adjustments, and revised pavement markings may be necessary to accommodate operational changes resulting from the introduction of bicycle and pedestrian traffic along the Grand Junction path.

The signalization of the Grand Junction path crossings at Main Street and Massachusetts Avenue would be feasible with close coordination of signal phasing and timing with the adjacent signals. The proposed traffic signals should be installed to provide clear indications to vehicles at each of the signalized intersections along Massachusetts Avenue and Main Street. This is especially important within the study area due to the close proximity of the signalized intersections and the presence of the existing railroad crossings. Ensuring that traffic signal heads and warning devices are placed appropriately within the "cone of vision" described in the Manual on Uniform Traffic Control Devices (MUTCD) for each intersection approach will help provide clear and definitive direction and guidance to vehicles traveling along these roadways. Should the Grand Junction Path progress to the next level of design, items such as coordination with existing railroad pre-emption, impacts to potential future transit service, and traffic signal layout will need to be explored in greater detail prior to implementation. However, installation of traffic signal equipment for the vehicular movements at the Grand Junction path crossings is considered to be feasible and is depicted in the layout plans above.


Washington Park
Morse School
Magazine Beach
GRANITE STREET
ROCKINGHAM STREET
HASTINGS SQUARE
BROOKLINE STREET
CHESTNUT STREET
HENRY STREET
SIDNEY STREET
PUTNAM AVENUE
GROVE AVENUE
WAVERLY STREET
VASSAR STREET
MEMORIAL DRIVE
WAVERLY ST
PROPOSED GRAND JUNCTION PATH
AMESBURY STREET
AUDREY STREET
DR. PAUL DUDLEY WHITE BIKE PATH
1
2
3
4
5

Grand Junction path routing options near the BU Bridge


Emergency Generators & Equipment
Building Access
Parking Lot Fence
Track CL
Approx. 9' at closest point

Constrained conditions adjacent to 640 Memorial Drive

Connections westward to the BU Bridge, Dr. Paul Dudley White Bike Path, and Allston/Brighton

The Grand Junction Path, when complete, has the potential to serve a large regional bicycle and pedestrian network, connecting existing and future multi-use paths. Connections to the west of the MIT-owned section of the proposed path would link the BU Bridge, the Dr. Paul Dudley White Bike Path, and the neighborhoods of Allston/Brighton.

With the proposed Grand Junction path running along the northern side of the existing railroad tracks, there are several routing opportunities for various destinations. These connections should be direct and convenient for all path users. In addition, they should maintain a low stress level and separation from vehicular traffic in order to appeal to a variety of users.

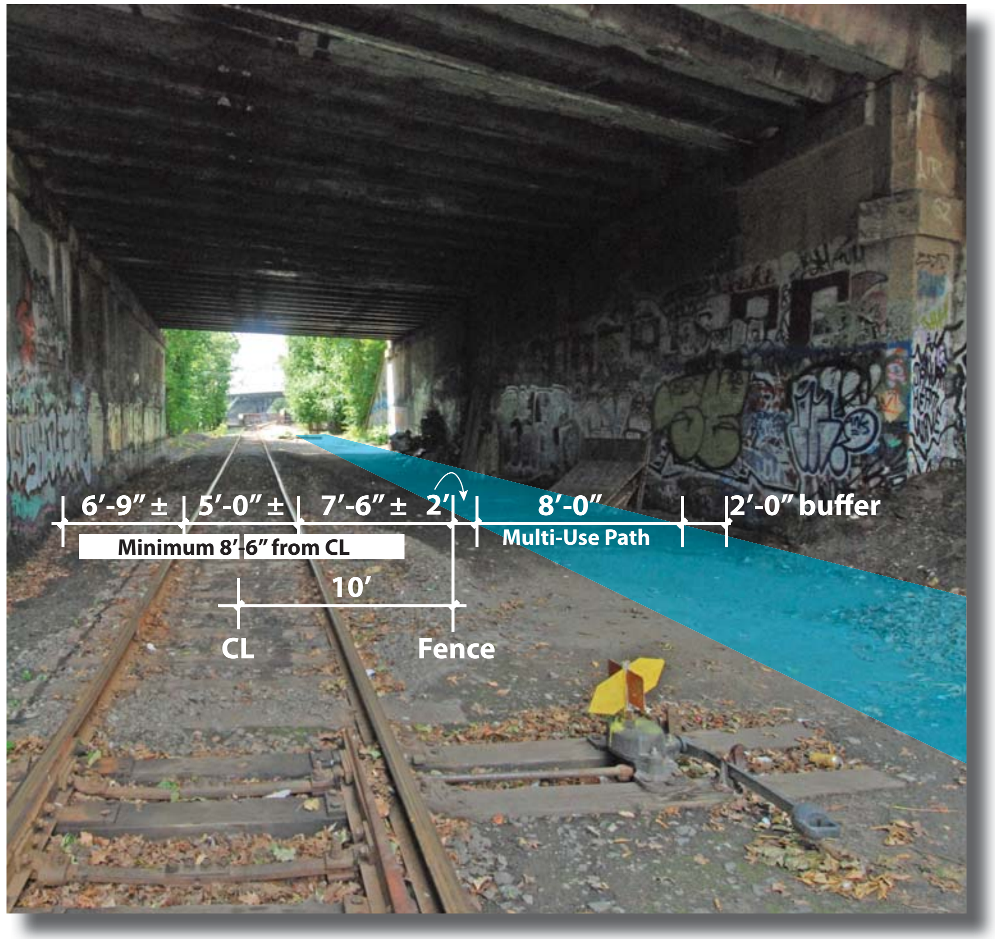
❶ **Amesbury Street.** To connect to the Dr. Paul Dudley White Bike Path and points east, multi-use path users may utilize the existing rail crossing at Fort Washington Park to access the Vassar Street bicycle facilities and Amesbury Street. Amesbury Street offers a low-stress connection to the Dr. Paul Dudley White Bike Path (due to low traffic volumes) but will require an additional crossing on Vassar Street. Since the intersection of Amesbury Street and Memorial Drive is signalized, multi-use path users can safely cross Memorial Drive and access the Dr. Paul Dudley White Bike Path at this location.

❷ **Waverly Street/BU Bridge Rotary.** Waverly Street and the BU Bridge Rotary provides access to the Dr. Paul Dudley White Bike Path and points west as well as to the BU Bridge. Improvements are necessary to provide a low stress connection along Waverly Street and through the BU Bridge Rotary. See the following page for details.

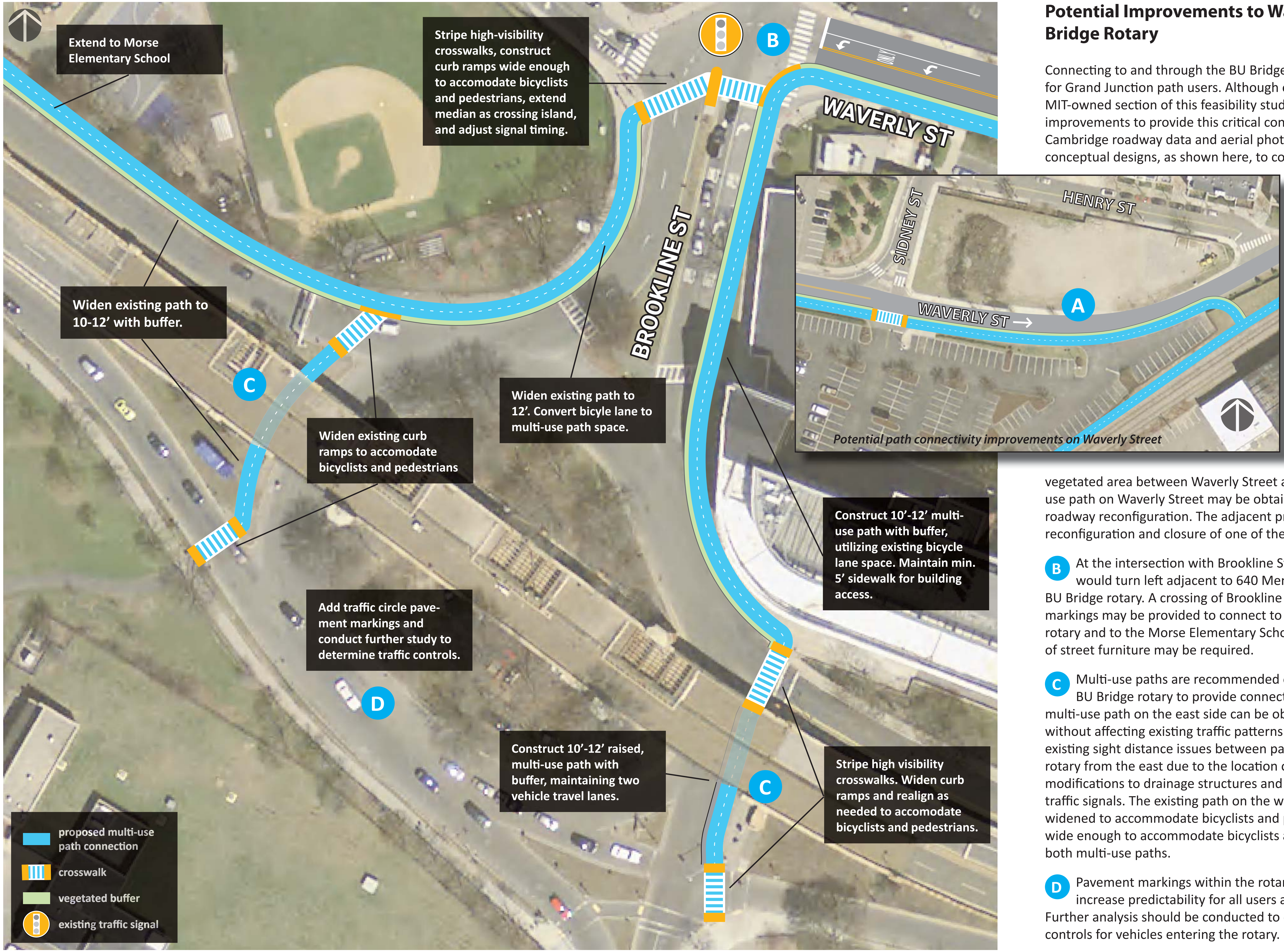
❸ **Memorial Drive Underpass.** Insufficient space between the railroad tracks and the parcel line for the building at 640 Memorial Drive along with fixed generator structures present obstacles for path continuation here. Further analysis is necessary to determine if there are potential feasible solutions to this constraint. Southward, sufficient space exists to continue the path through the existing tunnel under Memorial Drive, assuming the single track configuration remains.

❹ **BU Bridge to Rail Bridge.** For additional connectivity, a multi-use path connecting the BU Bridge approach to the rail bridge over the Charles River would provide more direct routes for path users. Due to the steep grade difference just east of the BU Bridge, further analysis is necessary to determine if a path connector is feasible.

❺ **Rail Bridge over the Charles River.** Providing a route across the Charles River along the existing rail bridge is necessary to provide the only low stress, vehicle-separated river crossing in the vicinity. Improvements to the rail bridge would be necessary such as the use of a cantilevered path structure.


6'-9" ±
5'-0" ±
7'-6" ±
2'
8'-0"
2'-0" buffer
Minimum 8' 6" from CL
Multi-Use Path
10'
CL
Fence

Potential location for a second track, which would not allow a path without major reconstruction.


Extend to Morse Elementary School
Stripe high-visibility crosswalks, construct curb ramps wide enough to accomodate bicyclists and pedestrians, extend median as crossing island, and adjust signal timing.
B
WAVERLY ST
BROOKLINE ST
Widen existing path to 10-12’ with buffer.
C
Widen existing curb ramps to accomodate bicyclists and pedestrians
Widen existing path to 12’. Convert bicyle lane to multi-use path space.
Construct 10’-12’ multi-use path with buffer, utilizing existing bicycle lane space. Maintain min. 5’ sidewalk for building access.
Add traffic circle pavement markings and conduct further study to determine traffic controls.
D
Construct 10’-12’ raised, multi-use path with buffer, maintaining two vehicle travel lanes.
C
Stripe high visibility crosswalks. Widen curb ramps and realign as needed to accomodate bicyclists and pedestrians.
proposed multi-use path connection
crosswalk
vegetated buffer
existing traffic signal
HENRY ST
SIDNEY ST
WAVERLY ST →
A

Potential path connectivity improvements on Waverly Street

Proposed path connectivity improvements at the BU Bridge Rotary

Potential Improvements to Waverly Street and the BU Bridge Rotary

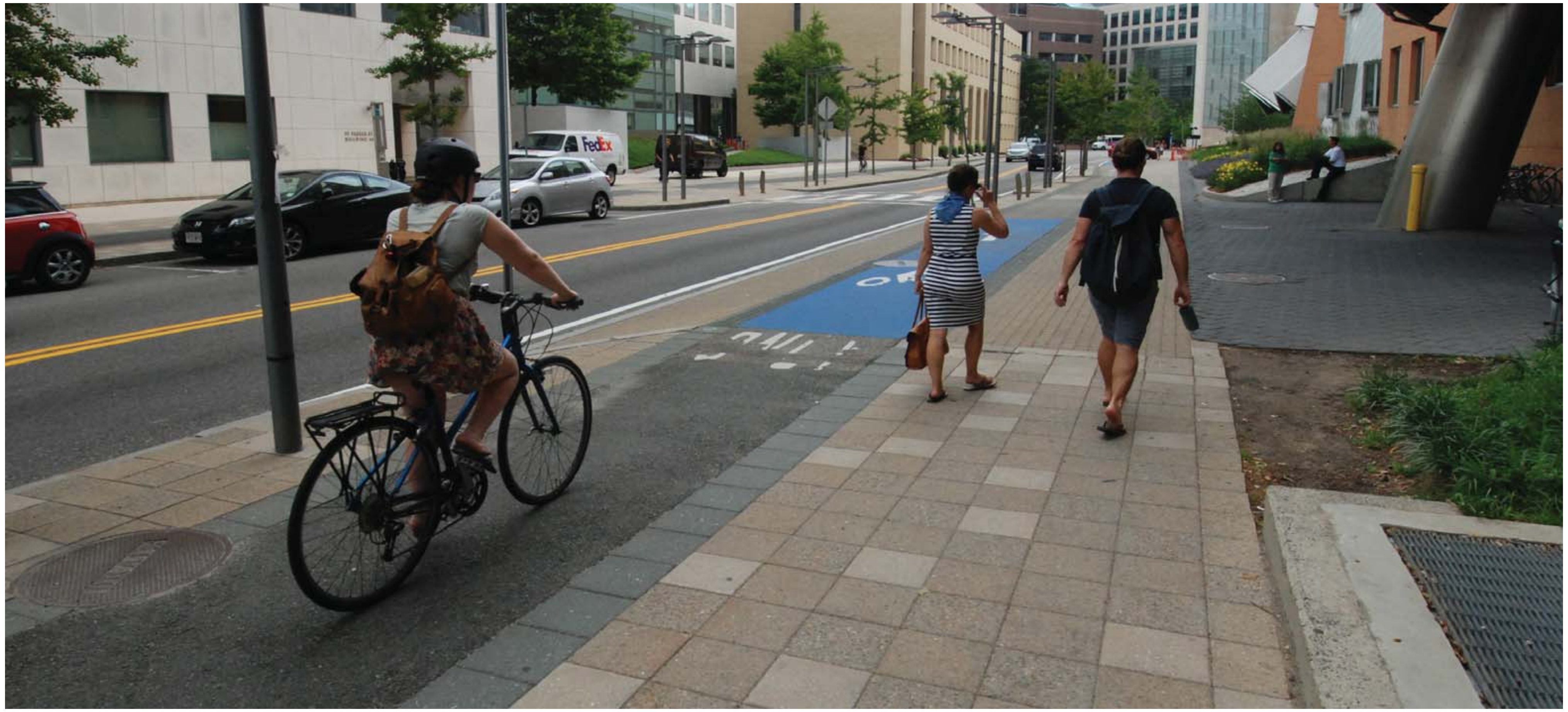
Connecting to and through the BU Bridge rotary is an important desire line for Grand Junction path users. Although outside the primary scope for the MIT-owned section of this feasibility study, the team reviewed potential improvements to provide this critical connection. Using existing City of Cambridge roadway data and aerial photos, the team prepared planning-level conceptual designs, as shown here, to continue a low-stress path connection using Waverly Street and the BU Bridge rotary. No survey, field verification, right-of-way data, or utility information were used to develop these conceptual designs. Further design is necessary including traffic analysis. The following potential improvements along Waverly Street and within the BU Bridge rotary may provide a low-stress multi-use path connection to the BU Bridge rotary, the Dr. Paul Dudley White Bike Path, the BU Bridge, and points west.

A A multi-use path is proposed along the southern edge of Waverly Street connecting to the Grand Junction Path through the vegetated area between Waverly Street and the rail corridor. Space for a multi-use path on Waverly Street may be obtained from the existing bicycle lanes and roadway reconfiguration. The adjacent privately-owned parking lot may require reconfiguration and closure of one of the entrances and exits.

B At the intersection with Brookline Street, the proposed multi-use path would turn left adjacent to 640 Memorial Drive and continue south to the BU Bridge rotary. A crossing of Brookline Street with curb ramps and pavement markings may be provided to connect to the western side of the BU Bridge rotary and to the Morse Elementary School. Signal modifications and relocation of street furniture may be required.

C Multi-use paths are recommended on both the east and west sides of the BU Bridge rotary to provide connectivity from all directions. Space for a multi-use path on the east side can be obtained from the excess pavement without affecting existing traffic patterns. This raised multi-use path will improve existing sight distance issues between path users and motorists entering the rotary from the east due to the location of abutments. This may require modifications to drainage structures and relocation of street furniture including traffic signals. The existing path on the west side of the rotary should be widened to accommodate bicyclists and pedestrians. Curb ramps and crosswalks wide enough to accommodate bicyclists and pedestrians should be provided for both multi-use paths.

D Pavement markings within the rotary should be installed in order to increase predictability for all users and to decrease vehicular weaving. Further analysis should be conducted to determine the appropriate traffic controls for vehicles entering the rotary.



Analysis of Vassar Street

As part of this feasibility study, the existing bicycle and pedestrian facilities along Vassar Street were reviewed for potential improvements and compliance with the latest standards and guidelines. The review of Vassar Street facilities was conducted as an independent task and the outcome had no impact on determining the feasibility of the Grand Junction Path.

In discussions with the Advisory Committee, it was suggested that Vassar Street continue to serve as a local bicycle connection and that the Grand Junction Path serve as a regional connection. However, Vassar Street bicycle facilities provide the potential for short term detours during future construction along the Grand Junction corridor. Temporary improvements along Vassar Street, such as crosswalks and curb ramps, would be necessary to detour bicyclists during construction projects.

Vassar Street is a two-way roadway that operates between Main Street and Memorial Drive. Typically within the right-of-way of this urban minor arterial there are two vehicular travel lanes, two one-way bicycle facilities, on-street parking on one side, and sidewalks on both sides of the roadway. The bicycle facilities provided along the corridor are either on-street bicycle lanes or a sidewalk-level one-way cycle track. The on-street bicycle lanes are typically provided at intersections and in the constrained section between Audrey Street and Memorial Drive. The remaining sections contain a sidewalk-level one-way cycle track. The sidewalk-level cycle track is an asphalt surface while the adjacent sidewalk is pavers, as shown above. Bicycle ramps are provided to transition bicyclists to and from on-street bicycle lanes and cycle tracks.

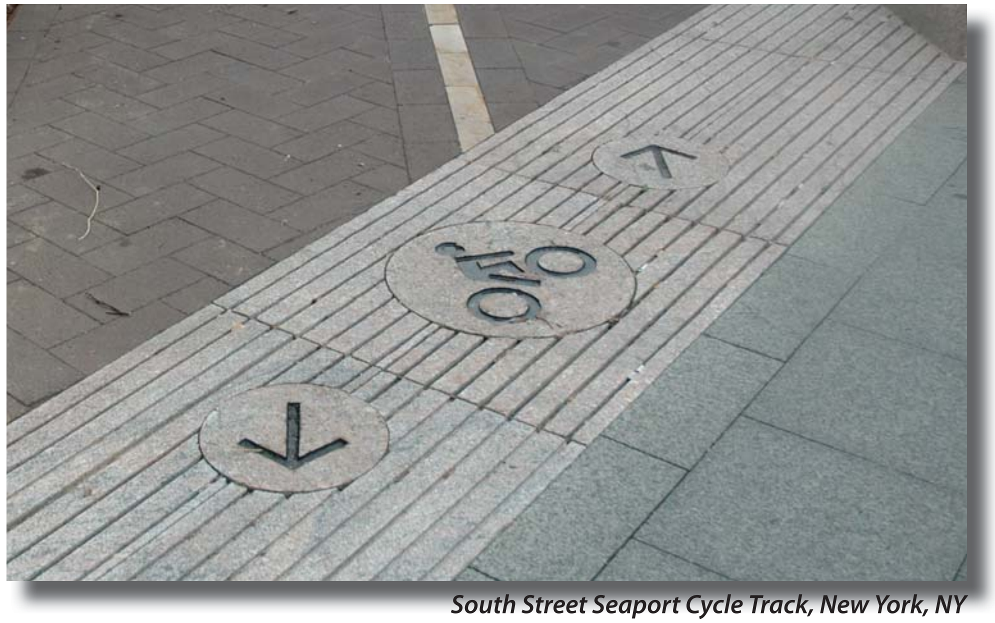
Short-term Recommendations (signs, pavement markings)

- Provide roadway crossing and curb cut at Pacific Street where railroad crossing was recently constructed
- Replace existing signage to conform to MUTCD standards
- Install warning signs at mid-block crosswalks
- Install wayfinding signage to define user separation
- Relocate signs to improve visibility
- Reinstall bicycle symbols and pavement markings
- Add yield markings at pedestrian crosswalks
- Change surface color to green
- Add yield lines and 'Yield to Bikes" signs at driveways
- Add bicycle queue boxes at Main St. and Massachusetts Ave. intersections
- Reset utility covers within bicycle facilities where not flush with surface
- Restrict parking approximately 10-30 feet at driveways to increase visibility

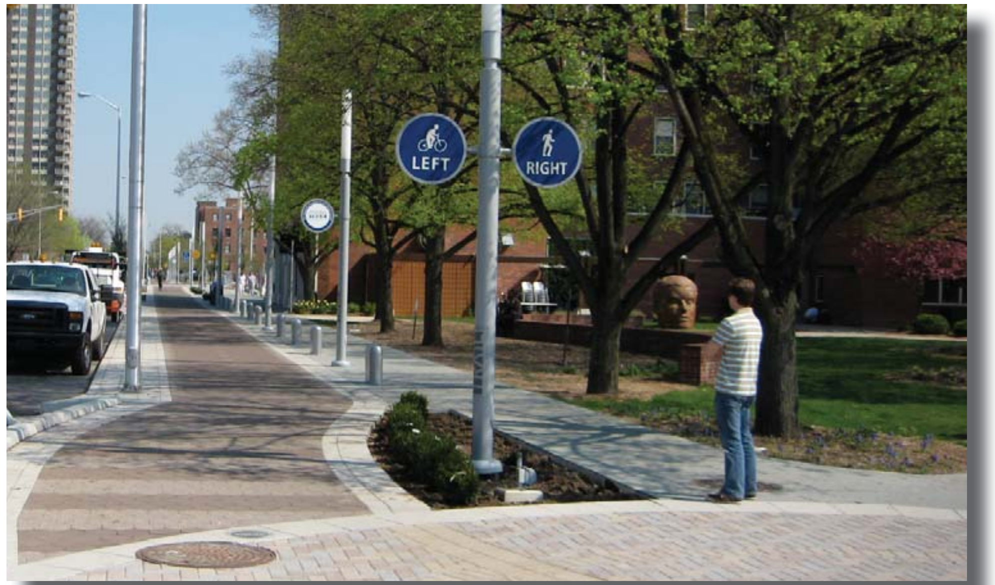
Long-term Recommendations (construction necessary)

- Reconstruct bicycle lanes to cycle track at Main Street intersection
- Extend cycle track to Memorial Drive
- Revise grading to eliminate water ponding
- Install warning signs and beacons at adjacent garages

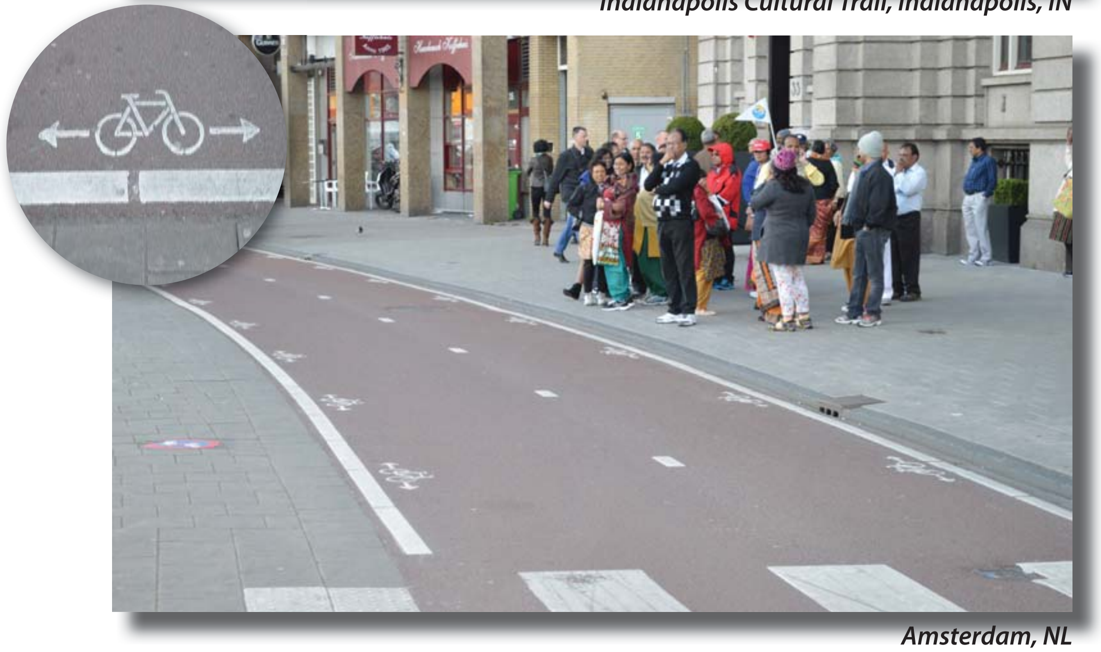
Examples of wayfinding and modal guidance treatments



South Street Seaport Cycle Track, New York, NY



Indianapolis Cultural Trail, Indianapolis, IN



Amsterdam, NL

Next Steps

The Grand Junction Corridor (GJC) is a complex area with numerous owners and abutters providing a range of activities. While this study focuses on the MIT-owned segments of the corridor, understanding the feasibility of incorporating a multi-use path along its entire length requires a cooperative effort between MassDOT, the City of Cambridge, MIT, DCR, and affected abutters. This effort would most logically be led by the City of Cambridge, although many of the issues to resolve fall within the purview of MassDOT. The varied ownership and potentially competing uses for the corridor necessitates a cooperative approach to exploring the feasibility of each of the segments which make up the corridor as well as its overall design and operation.

Decisions about the following key physical design and policy issues will affect the viability and connectivity of the Grand Junction Corridor path. Additionally, establishing a timetable for feasibility studies, design and funding for any proposed improvements to a particular segment will help to determine the best plan for overall implementation. The concept for the corridor is to build segments incrementally as funding is identified, land becomes available, and technical and policy issues are resolved, with the long term goal of connecting all segments and creating regional connections. The following issues are organized geographically, west to east, and not ordered by priority.

Connections to Allston/Turnpike Path The Allston Yards is the desired western destination for the Grand Junction Corridor path. Planning for redevelopment of that area is currently underway and includes new circulation paths for all modes; proposed connections to BU's western campus and Harvard's Allston campus near Cambridge Street; the creation of a West Station for commuter rail service; and a possible realignment of Soldiers Field Road to create more open space along the Charles River. The connection between the Allston Yards and the Grand Junction Railroad Bridge is referred to as the Turnpike Path. The design of bicycle or multi-use paths along the rail line in this area is part of the current planning effort and should be coordinated with an overall Grand Junction Corridor plan—particularly in terms of schedule.

Grand Junction Railroad Bridge Two concepts for using the bridge as part of the path are the conversion of the unused western (upstream) portion of the bridge into a multi-use path, or constructing a path against the western (upstream) side of the bridge by either cantilevering a structure off the bridge or extending the bridge foundations to support a path. The technical feasibility and cost of these, or other, concepts need to be evaluated to determine the best alternative for this segment. If a two-track transit operation was initiated in the corridor, both sides of the bridge would be needed for transit vehicles. Additionally, the railroad bridge is elevated as it crosses Soldiers Field Road and connections to the Paul Dudley White Path need to be investigated.

Improvements at BU Bridge Rotary and Waverly Street Connections between the Grand Junction Corridor, BU Bridge and the Paul Dudley White Path are critical to enhancing network connectivity but are hampered by the steep topography and the BU Bridge rotary and overpass. Suggestions for improvements to the area are included in this feasibility study and others have been proposed in the past. Depending on whether the tunnel under Memorial Drive can provide a connection along the GJC, these additional connections become critical. If a GJC path cannot connect to the river then a path along Waverly Street is the most viable alternate route. Even if a GJC path can connect to the river, the Waverly Street route adds additional connectivity to the overall network. This concept is show on page 12, but further analysis is needed to understand the impacts to MIT property and Cambridge city streets. Additionally, the Department of Conservation and Recreation (DCR) controls Memorial Drive, including the rotary, and the adjacent open space along the Charles River, and needs to be a partner in the overall corridor planning.

Tunnel Under Memorial Drive The existing rail tunnel is slightly over 31 feet wide with one rail line on the east side. An 8-foot path with 2-foot buffers can fit next to the existing track and maintain a 10-foot offset from the centerline. If a second track is required for future transit service there would not be room for a multi-use path without major reconstruction. Memorial Drive is owned by the DCR and any potential widening of the tunnel to accommodate both a second track and a multi-use path would need to be coordinated with both DCR and MassDOT.

640 Memorial Drive There is not enough space between the track and the parking lot serving 640 Memorial Drive for a multi-use path. Emergency generators and other equipment are located at the edge of the parking lot next to the tracks. These are fixed items with underground connections to the building and are critical to the building's function. Relocation of this equipment and parking spaces would be difficult and expensive. The parking lot is on MIT property and is part of a long-term building lease. A reconfiguration of the track is another possibility but that would require a detailed study in order to determine its feasibility and cost. Until space for a path at this location can be resolved, a route along Waverly Street to the BU Bridge and Paul Dudley White (PDW) Path appears to be the most viable short-term solution.

Proposed Crossing at Amesbury Street Amesbury Street provides a connection between the PDW Path and the Vassar Street cycle track and aligns with a signalized intersection on Memorial Drive. The current Vassar Street cycle track which runs parallel to the GJC will remain, providing local connections as well as providing an alternate route when segments of the corridor are closed for construction or maintenance of adjacent MIT buildings or utilities. The segment of the PDW Path between the BU Bridge and the BU Boathouse is a narrow sidewalk along Memorial Drive—a less than ideal facility for two-way bicycle and pedestrian travel. An alternative route, at least for less-experienced bicyclists, would go from the Cambridge end of the BU Bridge, under the Reid Overpass to Waverly Street, cross the tracks at Fort Washington Park, then down Amesbury Street and back to the PDW Path. While significantly longer, it may be an attractive route for casual recreational bicyclists or families riding with children.

Connections to Somerville Community Path The inclusion of the Somerville Community Path as part of the Green Line Extension (GLX) project provides an excellent opportunity for regional connectivity. How this path will connect to the Grand Junction Path is unresolved. Several options between Gore Street and the Community Path have been proposed but a technical study needs to be undertaken to access the viability.

Future Transit Service in the Corridor The largest unknown in the corridor is a physical feature as well as a planning and policy decision by MassDOT regarding future transit use. The state's goal is to maintain options and, until a decision is made, this unknown makes it difficult to understand transit needs and any potential impacts to the path. DMUs are being considered for transit service in the corridor with a goal of running at 15-minute headways. Optimally, this service would run on two tracks. However, the majority of the corridor is currently a single track and there is limited space for adding the second track. Additionally, station locations have not been determined. The feasibility of DMUs, or other transit service, in the corridor needs to be analyzed in detail to understand the requirements for service headways and if two tracks are needed throughout, the size and location of platforms, and requirements for crossings at Mass Ave and Main Street.

MassDOT Easement The proposed path configuration west of Mass Ave is dependent on the use of the outer six feet of the rail easement. While this appears to have no impact on rail operations and would mirror the conditions east of Mass Ave, a determination must be made and approval given by MassDOT.

Funding Funding for land acquisition, design, construction, and maintenance must be identified. With the cooperation of affected government agencies, land in the public realm could likely be made available for the path. However, acquisition of an easement or rights to use the MIT-owned portion of the corridor will need to be negotiated and assure MIT's ability to operate in the corridor. Although funding for design and construction would be a one-time cost, maintenance costs would be ongoing.

Operations & Maintenance Operation and maintenance for the Grand Junction Corridor will need to be a cooperative effort among owners and may be approached geographically or by task. Operation and maintenance issues to be addressed include: snow removal, police patrols, repair of pavement, maintenance of lighting and fencing, and litter collection.

Liability In light of existing physical challenges, potential limitations of statutory protections, development impediments, and risk and safety considerations posed by this multi-use rails with trails path, MIT has realistic concerns and would need to understand the apportionment of responsibility and risk associated with design, construction, maintenance, snow & ice removal, security, relocation of existing obstructions or hazards, etc., among the interested parties in considering the City's project further.

To move this project ahead, it is strongly recommended that a task force be formed that is led by the City of Cambridge and includes representatives from MIT, MassDOT, DCR, abutters, advocacy groups, and other stakeholders.

KLEINFELDER

Appendices

Grand Junction Community Path
And
MIT Property Feasibility Study

October 2014

Appendix A Vassar Street Review
Appendix B Crossings at Mass Ave and Main Street
Appendix C Goals and Evaluation Criteria
Appendix D Rail-with-Trails Precedents
Appendix E Liability Issues
Appendix F Project Cost
Appendix G Advisory Committee Presentation
Appendix H Notes from Materials Management Meetings
Appendix I Survey Monkey Results
Appendix J Path Options Not Selected

Appendix A

Vassar Street Review

TooleDesignGroup

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MEMORANDUM

Date: October 1, 2014

To: Tom Doolittle, ASLA, PLA, LEED AP BD+C, Kleinfelder
Don Kindsvatter, AIA, AICP, LEED AP, Kleinfelder

From: Michelle Danila, P.E., PTOE, Toole Design Group

Project: Grand Junction Community Path and MIT Property – Feasibility Study

Re: Review of Vassar Street Conditions

Toole Design Group (TDG) has conducted a standards and guidelines review of the existing pedestrian and bicycle infrastructure along Vassar Street between Main Street and Memorial Drive in Cambridge, Massachusetts. The review uses the latest standards and guidelines used for designing for pedestrians and bicyclists within the United States. These standards and guidelines are the:

- Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation Federal Highway Administration, 2009;
- Guide for the Development of Bicycle Facilities, 4th Edition, American Association of State Highway and Transportation Officials, 2012;
- Guide for the Planning, Design, and Operation of Pedestrian Facilities, 1st Edition, American Association of State Highway and Transportation Officials, 2004;
- Urban Street Design Guide, National Association of City Transportation Officials, 2013; and
- Urban Bikeway Design Guide, 2nd Edition, National Association of City Transportation Officials.

In addition to national standards and guidelines, the City of Cambridge's *Cycle Track: A Technical Review of Safety, Design, and Research*, April 2014, was reviewed. This memorandum will discuss the existing conditions of Vassar Street and recommendations to conform the corridor to current standards and guidelines.

Existing Conditions

Vassar Street is a two-way roadway that operates between Main Street and Memorial Drive in Cambridge, Massachusetts. Typically within the right-of-way of this urban minor arterial are two vehicular travel lanes, two one-way bicycle facilities, one side of on-street parking, and sidewalks on both sides of the roadway. The bicycle facilities provided along the corridor are either on-street bicycle lanes or a sidewalk-level one-way cycle track.

Pedestrian curb ramps are provided at all intersections and midblock crossings. This field analysis did not conduct a detailed ADA assessment to determine if the existing grades meet ADA requirements.

The on-street bicycle lanes are typically provided at intersections and in the constrained section near Memorial Drive. The remaining sections contain a sidewalk-level one-way cycle track. The sidewalk-level cycle track is an asphalt surface while the adjacent sidewalk is pavers. Bicycle ramps are provided to transition bicyclists to and from the on-street bicycle lanes and the cycle tracks.

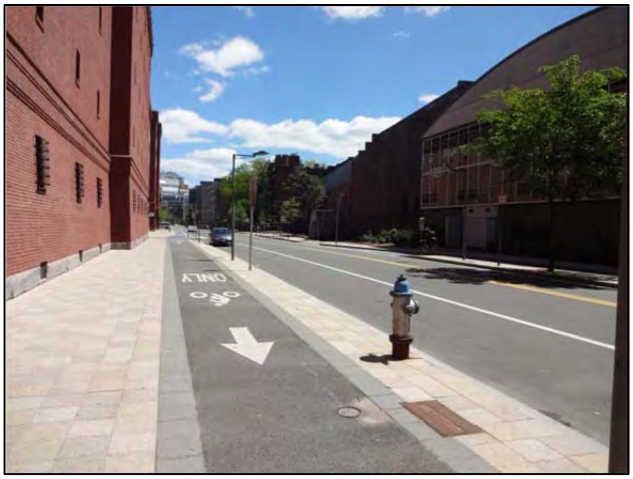


Figure 1: Typical Vassar Street Cross Section

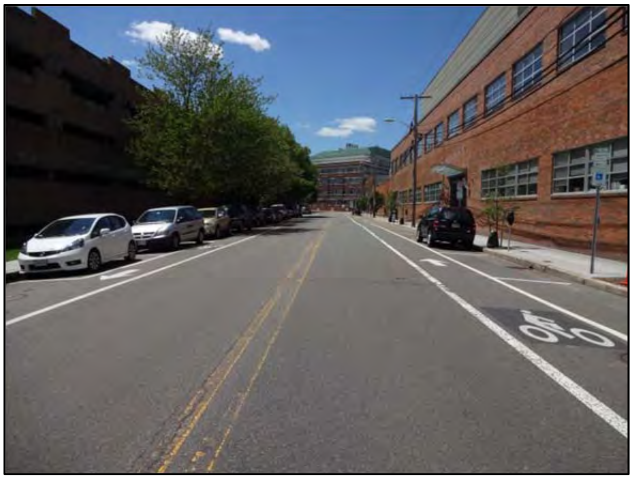


Figure 2: Vassar Street near Memorial Drive

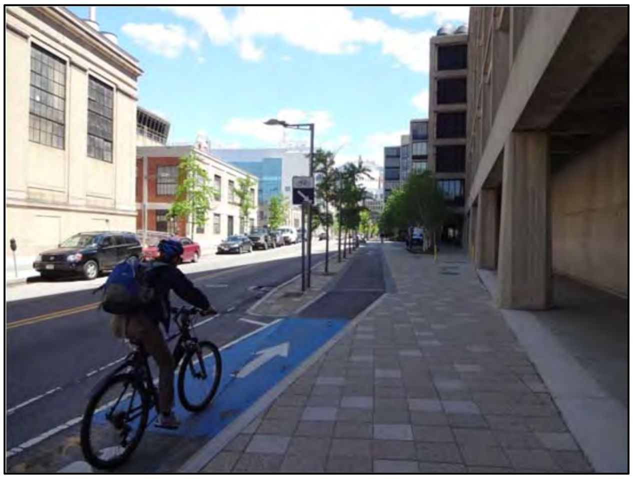


Figure 3: Typical Transition between Facilities on Vassar Street

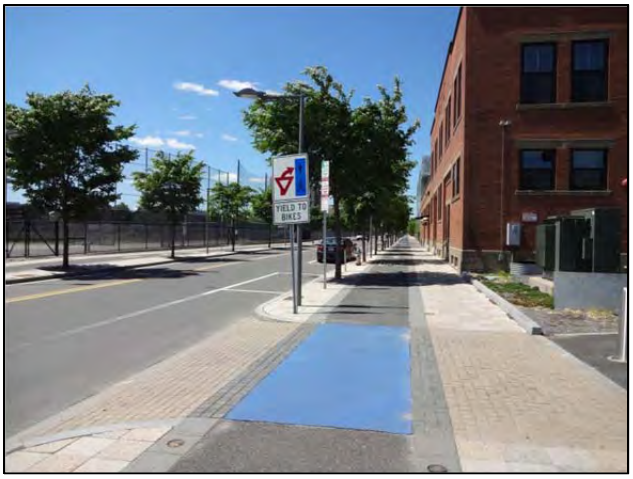
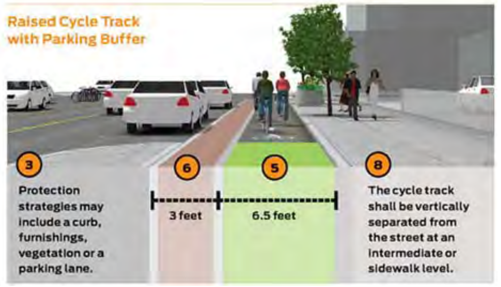
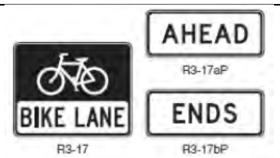
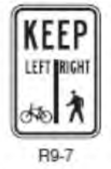
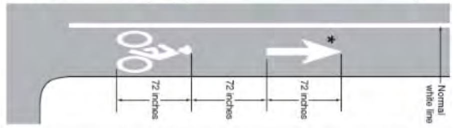
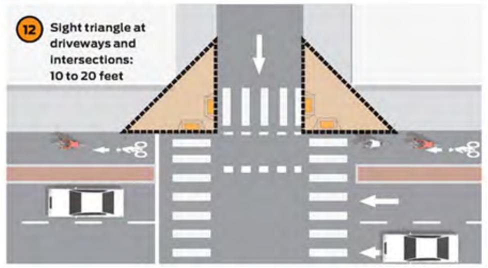
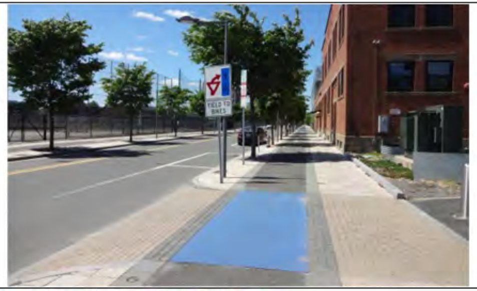
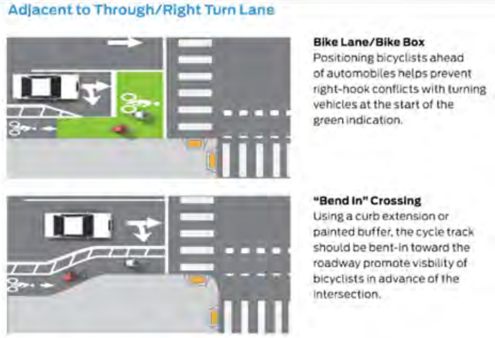


Figure 4: Typical Conflict Area Treatment on Vassar Street

Recommendations

The following table presents the recommendations and action items necessary to provide the latest standards and guidelines on pedestrians and bicycle infrastructure on Vassar Street. For each recommendation, the table includes the estimated time frame and construction costs. The time frame is categorized as short-term (<1 year) or long-term (>1 year). The costs are categorized as low (<$10,000), medium ($10,001 to $50,000), high (>$50,001). For recommendations that require further study, the timeframe was estimated as short-term and a cost estimate was not provided. In addition, the table is divided into 5 categories – General, Pavement Markings and Signage, Signal Modifications, Conflict Areas, and Other Considerations.

Category	*Recommendation*	*Action*	*Notes*	*Timeframe*	*Costs*
General	The preferred width for a one-way raised cycle track is 7 feet.	The Vassar Street cycle track is typically 6 feet wide. This would require reconstruction and is not feasible at this time.	 Raised Cycle Track with Parking Buffer 3 Protection strategies may include a curb, furnishings, vegetation or a parking lane. 6 3 feet 5 6.5 feet 8 The cycle track shall be vertically separated from the street at an intermediate or sidewalk level.	N/A	N/A
	Provide a minimum of 3 feet from parked cars or street furniture for raised cycle tracks.	The Vassar Street buffer between parked cars and the cycle track is typically 5 feet and requires no action at this time.		N/A	N/A
	To reduce pedestrian use within the cycle track, use street furniture and/or different materials.	Vassar Street's street furniture is located between the roadway and cycle track. This would require reconstruction and significant tree removal and is not feasible at this time.		N/A	N/A
	Provide ADA-compliant curb ramps along corridor.	Conduct an accessibility analysis to determine if there are any existing curb ramps that need to be reconstructed to meet current ADA requirements and include detectable warning panels.		Short-term	N/A
	Extend raised cycle track to Main Street and provide bicycle crossing to future shared-use path.	Reconstruct bicycle lanes at sidewalk-level and add bicycle crossing and ramps at the intersection of Main Street for connectivity.		Long-term	Medium
	Extend cycle track to Memorial Drive.	Reconstruct roadway and possibly remove one side of on-street parking to extend cycle track to Memorial Drive.		Long-term	High
	Provide roadway crossing for Pacific Street southbound bicyclists to connect to Vassar Street eastbound cycle track.	Install ADA-compliant ramps, crosswalk pavement markings, and warning signs on Vassar Street at the Pacific Street crossing.		Short-term	Medium
	Provide connectivity from Vassar Street to the Charles River Pathway System at the intersection of Memorial Drive.	Conduct traffic study to determine how to cross pedestrians and bicyclists from Vassar Street to the Charles River Pathway System at Memorial Drive.		Short-term	N/A
Pavement Markings and Signage	Provide MUTCD compliant signs.	Replace existing signage to conform to the latest MUTCD standards.		Short-term	Low
	Provide warning signs at midblock crosswalks.	Install warning signs at all midblock crosswalks along the corridor.		Short-term	Low
	Provide wayfinding signage to define user separation.	Install wayfinding signage along the corridor.		Short-term	Low

Category	Recommendation	Action	Notes	Timeframe	Costs
Pavement Markings and Signage (cont.)	Install signs in locations where visibility is adequate.	Relocate signs to be visible by the roadway users.		Short-term	Low
	Provide bicycle symbol pavement markings within the cycle track and bicycle lanes.	Reinstall bicycle symbols and pavement markings throughout the corridor.		Short-term	Low
	Within the cycle track, provide yield markings at pedestrian crosswalks.	Add yield markings at pedestrian crosswalks.		Short-term	Low
Conflict Areas	Provide adequate sight distance at driveways and intersections.	Restrict parking approximately 10-30 feet at driveways to increase visibility.	 ⑫ Sight triangle at driveways and intersections: 10 to 20 feet	Short-term	Low
	Use pavement markings at conflict areas with the cycle track including green surface, yield lines, and "Yield to Bikes" signs.	Install green colored pavement in conflict areas and add yield lines and MUTCD-compliant "Yield to Bikes" signs.		Short-term	Low
	Provide adequate visibility between bicyclists and motorists at intersections.	Conduct further study to determine the appropriate intersection design for the intersection of Massachusetts Avenue.	 **Bike Lane/Bike Box** Positioning bicyclists ahead of automobiles helps prevent right-hook conflicts with turning vehicles at the start of the green indication. **"Bend In" Crossing** Using a curb extension or painted buffer, the cycle track should be bent-in toward the roadway promote visbility of bicyclists in advance of the intersection.	Short-term	N/A
	Provide two-stage queue boxes to assist bicyclists making turns.	Add bicycle queue boxes at the intersections of Main Street and Massachusetts Avenue.		Short-term	Low

Category	Recommendation	Action	Notes	Timeframe	Costs
Conflict Areas (cont.)	Provide adequate space and maneuverability for bicyclists at bus stops.	Conduct study on potential alternatives to reduce the conflict between bicyclists and buses at the bus stops for the Easy Ride and CT2. Consideration should be given to utilizing potential space within adjacent parcels when available.		Short-term	N/A
Other Considerations	Provide drainage and grading to reduce water ponding.	Revise grading and/or drainage structures to eliminate water ponding.		Long-term	Medium
	Any utility covers within the bicycle facilities should be flush with the surface to reduce any tripping hazard.	Reset utility covers within the bicycle facilities to existing grades.		Short-term	Low
	Provide warning signs and beacons for vehicles exiting garages.	Install warning signs and beacons to alert vehicles exiting the garage of the presence of pedestrians and bicyclists.		Long-term	Medium

Appendix B

Crossings at Mass Ave and Main Street

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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MEMORANDUM

TO: Tom Doolittle, Kleinfelder
Kelly Brown, MIT

FROM: Phil Viveiros, P.E., PTOE
Erin Pacileo, P.E. and Matt Starkey, E.I.T.

DATE: September 25, 2014

RE: Grand Junction Path
Crossings at Massachusetts Avenue and Main Street
Traffic Signal Analysis and Feasibility
Cambridge, MA

The Grand Junction Path would have two primary roadway crossings along its length within the MIT campus, one located on Massachusetts Avenue and one located on Main Street. Due to the heavy multi-modal utility of these two major corridors within Cambridge, it is critical to the success of the Grand Junction Path to provide safe and efficient crossings for pedestrians and bicycles along the path, as well as for vehicles along the roadways. In order to provide safe crossings at each of these locations, signalization of the crossings has been investigated. A review was conducted to explore the feasibility of traffic signal equipment installation, potential signal timing and phasing plans and impacts to adjacent intersections and roadways, as well as to the path itself. The review presented below discusses elements of the proposed traffic signal for the path crossings in terms of vehicles, pedestrians, and bicycles.

Study Area

With the two primary crossings within MIT at Massachusetts Avenue and Main Street, the following study area intersections were included as part of the feasibility study:

- Massachusetts Avenue at Vassar Street
- Massachusetts Avenue at Railroad/Grand Junction Path
- Massachusetts Avenue at Albany Street
- Main Street at Vassar Street
- Main Street at Railroad/Grand Junction Path

Capacity analysis was conducted at the intersections noted above in order to capture the traffic operations and direct impacts of the signalization of the proposed Grand Junction Path.

Existing Traffic Volumes

Traffic volume data was provided by the City of Cambridge for the study area intersections based on a number of traffic impact studies and traffic counts recently conducted in the vicinity of the Grand Junction path.

Traffic volume counts during the weekday morning and weekday afternoon peak hours were utilized from the Kendall Square Main Street project (2010) and contractor counts provided by the City of Cambridge (2013). A review of historic traffic volume data was conducted in order to identify traffic growth from 2010 and 2013 to an existing 2014 year. Based on this review, traffic volumes within the City of Cambridge appear to be decreasing. Therefore, in order to present a conservative analysis, traffic volumes were not adjusted down to reflect the existing year. The resulting weekday morning and weekday afternoon peak hour traffic volumes utilized for the analysis documented in this memo are depicted in the figures attached to this memorandum.

Existing Conditions

The proposed Grand Junction Path crossings would be directly adjacent to the existing railroad crossings at Main Street and Massachusetts Avenue. The railroad crossings currently have flashing beacons, grade crossing sign assemblies, and pavement markings to identify the railroad crossings. Current train traffic is so infrequent that the trains stop at the intersections before actuating the traffic signal pre-emption. The future path signal design will need to account for current and future train actuation and crossing requirements along the Grand Junction corridor.

Capacity analysis of the existing conditions at the study area intersections was conducted in order to establish a baseline comparison for the various signalized crossing alternatives. Due to current train activity occurring outside of the weekday peak hours, the railroad traffic signal pre-emption is not included in the analyses conducted as part of this feasibility study. Should the Grand Junction Path advance to a more detailed design phase, additional analysis accounting for the railroad pre-emption would need to be developed. A level-of-service summary for each of the intersections during the weekday morning and weekday afternoon peak hours are presented in Table 1 below.

Table 1: Existing Capacity Analysis Summary

Location	Peak Hour		LOS[1]	Delay[2]	V/C[3]
Main Street at Vassar Street/Galileo Galilei Way	AM	Overall	B	14.5	0.45
	PM	Overall	B	14.9	0.61
Massachusetts Avenue at Vassar Street	AM	Overall	D	46.5	0.85
	PM	Overall	E	58.8	1.03
Massachusetts Avenue at Albany Street	AM	Overall	D	40.7	0.81
	PM	Overall	D	39.6	0.67

1 Level-of-Service

2 Average delay in seconds per vehicle

3 Volume to capacity ratio

As seen in the table, the existing study area intersections are generally shown to operate at acceptable overall LOS D or better during both the weekday morning and weekday afternoon peak hours with the exception of the Massachusetts Avenue and Vassar Street intersection which is shown to operate at overall LOS E during the weekday afternoon peak hour. Synchro capacity analysis worksheets and level-of-service and queue summaries for the 2014 Existing condition are also attached to this memorandum.

Keys to Success

Due to the existing infrastructure in the vicinity of the Grand Junction Path crossings, a context sensitive design for the signalization of these crossings is critical to the success of the path. Incorporation into the existing coordinated traffic signal system, queue management and maintaining traffic operations are the three key factors used as a guideline for proposed signalization.

Signal Coordination

The signalized intersections adjacent to the Grand Junction Corridor are part of a coordinated system of signalized intersections throughout this portion of Cambridge. The City typically manages its intersections on a pre-timed basis, using fixed time cycles that do not change or adapt in response to traffic patterns. Further, signals operating in coordination with each other in Cambridge typically operate under time-based coordination, where traffic signals are coordinated on the same time clock using GPS technology, but are otherwise running in isolation from each other. Cambridge’s management of traffic signals is unique among communities in the greater Boston area, and plays a role in determining what options are most feasible for adding or modifying traffic signals in the vicinity of the Grand Junction corridor.

Queue Management

With closely spaced traffic signals, queue management is a critical aspect when determining traffic signal phasing and timing. The Massachusetts Avenue and Main Street intersections require exact time-based coordination in order to limit vehicle queues from spilling back into the upstream intersections. Modifications to the existing signalized intersections as well as specific applications to the proposed signalized crossings can help manage queues and help prevent queue spillback.

Traffic Operations

Both Main Street and Massachusetts Avenue are busy corridors within the City of Cambridge. Therefore, it is important to maintain acceptable operations at the proposed signalized crossings as well as the adjacent study area intersections. Additionally, balancing delay experienced by both path users and vehicles along Main Street and Massachusetts Avenue was considered. Minimizing delay for path users will improve compliance and safety at the crossing while maintaining acceptable delay for vehicles will allow for efficient travel along these main roadways.

Proposed Signal Equipment

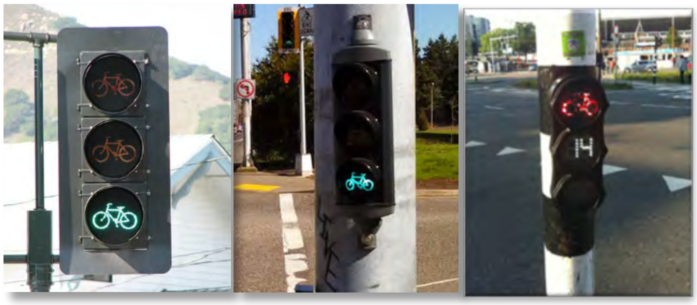
Below is a brief discussion of the potential traffic signal equipment and intersection layout considered as part of this feasibility study. It should be noted that all discussion presented below is conceptual in nature and should be studied further prior to implementation.

Motor-Vehicle Signals

The proposed signals for the path will be closely spaced with existing traffic signals at the intersections of Massachusetts Avenue and Vassar Street, Massachusetts Avenue and Albany Street, and Main Street at Vassar Street/Galileo Galilei Way. With multiple signals in such close succession, motorists travelling along Massachusetts Avenue and Main Street may not be able to easily identify the appropriate signal face. Limited visibility signal lenses – which can be adjusted to limit the visibility of specific signal faces to avoid having signals from multiple intersections be visible simultaneously - can be used to minimize driver confusion and enhance safety on the Massachusetts Avenue and Main Street corridors. Alternatively, standard traffic signal heads can be placed strategically to achieve this purpose and can be evaluated should the Grand Junction Path progress to the next level of design.

Bicycle Signals

Bicycle signals have special lenses that show the silhouette of a bicycle in red, yellow, or green. There are three types of bicycle signals that could be utilized along the Grand Junction corridor: far-side, near-side, and countdown to green signals. Far-side and nearside signals are approved by the Federal Highway Administration (FHWA) and National Association of City Transportation Officials (NACTO); they operate in a manner similar to standard traffic signals and can be used to regulate bicycle traffic in situations where no vehicular conflict exists. The size of the signal lenses is the primary differentiator between far-side bicycle signals (8” or 12”) and near-side bicycle signals (4”). It should be noted that the City of Cambridge does not currently support the use of 4-inch signal lenses.



Farside, Nearside and Countdown Bicycle Signals

Countdown to green signals are common in other countries such as Denmark and the Netherlands; however, they have not yet been fully tested in the United States. While a bicycle waits during a red signal, an LED display shows how many seconds remain until the bicycle signal will turn green. Countdown to green signals provide information similar to that of pedestrian countdown signals, which inform users how much time they have left to cross a street safely; the countdown to green signal simply works the opposite way, showing how much time the bikes have left to wait before crossing. It should be noted that the City of Cambridge does not currently support the use of countdown to green traffic signals.

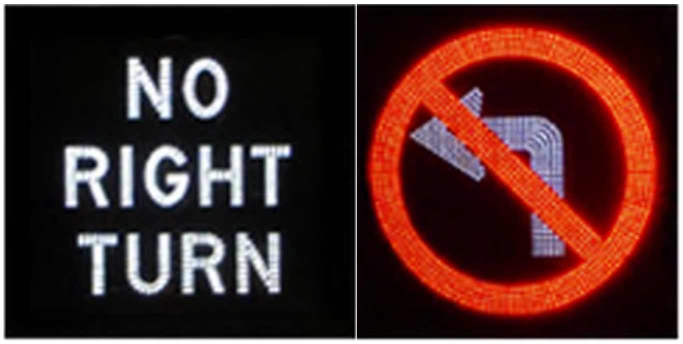
Pedestrian Signals

The assumed intent of the Grand Junction Path is that it will be multi-modal in nature, open to both pedestrian and bicycle traffic. In order to provide safe and efficient crossings for pedestrians along the Grand Junction Path, the use of pedestrian countdown signals is recommended. The installation of countdown equipment is feasible and provides pedestrians with sufficient information to allow for safe crossing across Main Street and Massachusetts Avenue.

Pedestrian Countdown Signal

Blank-Out Signs

The incorporation of LED blank-out signs at the Massachusetts Avenue intersections with Vassar Street and Albany Street could be considered to selectively prohibit traffic turning onto Massachusetts Avenue while the Grand Junction crossing (for path users and train traffic) is in effect. Prohibiting such turns in this situation limits the number of vehicles allowed to queue



Example of Blackout Boxes

along Massachusetts Avenue between Vassar Street and Albany Street. As discussed below, the blank-out signs could be utilized for the turning movements from Albany Street and Vassar Street onto Massachusetts Avenue towards the Grand Junction Path traffic signal. Used in this manner, the blank-out signs would only be activated in conjunction with the Grand Junction Path crossing. These signs would contain appropriate legends for this condition (such as "No Turn on Red" or "No Left Turn") that could be programmed within the traffic signal controller to only display while the path crossing phase was in use. It should be noted that the City of Cambridge does not support the use of blank-out signs to enforce conditional turn restrictions at signalized intersections.

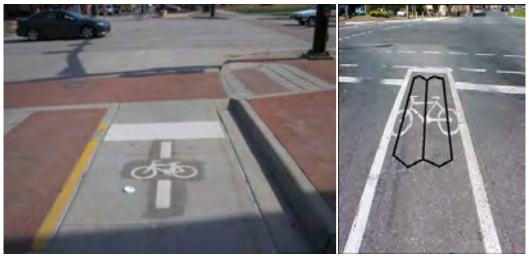
Pedestrian Hybrid ("HAWK") Beacons

The use of pedestrian hybrid beacons (sometimes referred to as "HAWK" beacons") was also investigated as a means to control the Grand Junction crossings at Massachusetts Avenue and Main Street. These beacons are designed to be used to regulate mid-block pedestrian crossings, when warranted (for example, a pedestrian hybrid beacon is currently being designed on Main Street as part of the Longfellow Bridge reconstruction), but have been used to regulate bicycle crossings by some municipalities (most notably in Arizona). However, due to both the potentially frequent interruption to traffic along both Massachusetts Avenue and Main Street, as well as the lack of clear standardized guidance regarding the use of these beacons for crossings of mixed-use paths, it was determined that the installation of pedestrian hybrid beacons for the Grand Junction Path crossings may not be a preferred alternative. However, should the Grand Junction Path progress to a more detailed design level, further investigation may be warranted to explore the implementation of pedestrian hybrid beacons (within the existing signal coordination) at the Massachusetts Avenue and Main Street crossings.

Detection Options

Given the urban nature and high number of conflicting vehicle and bicycle volumes along both Massachusetts Avenue and Main Street, signal detection for path users could be considered to minimize the number of interruptions to traffic flows on adjoining streets, particularly in off-peak traffic hours. A number of detection options and technologies are available for pedestrians and bicycles utilizing the Grand Junction path crossings. A summary of each option and a list of advantages and disadvantages for implementation along the Grand Junction path are outlined below.

Loop Detectors: The most commonly used type of detection for bicycles, bicycle loops provide a low-cost reliable option to provide detection of bicycles at the path crossings. Wire loops are imbedded within the pavement, creating a magnetic field that changes when a bicycle crosses the detection area; this change is recognized by the signal as a bicycle waiting to enter the intersection.



Bicycle Loop Detectors

Advantages:

- Can detect single aluminum tire
- Detectors are easy to spot on clear day
- Most common type of vehicle/bicycle detection
- Lowest installation cost for vehicle/bicycle detection

Disadvantages:

- Bike must be positioned exactly in the detection area
- Environmental factors (darkness, new road surfaces, debris) may make detection area unclear
- Not applicable for pedestrian detection; would also need dedicated pedestrian detector
- Loop wires susceptible to breaking during construction/repair activities near detection areas

Video Detection: Video detection offers a less intrusive form of bicycle detection, using cameras elevated over the roadway surface and image recognition software to detect bicycles and pedestrians in detection zones that are easily adjustable.

Video Detector

Advantages:

- Detection improved with bike or helmet light
- Easy to relocate detection zone
- Can detect any object without metal
- Can provide directional detection to avoid departure movements and sidewalk traffic

Disadvantages:

- Low light, foggy or inclement weather may interfere with recognition
- Higher up-front construction cost

Microwave Detector

Microwave: Microwave detectors are another option to passively detect bicycles and pedestrians. Newer models allow for directional detection, so that only bicycle and pedestrian traffic approaching an intersection are detected.

Advantages:
- Can be used on any surface
- Not susceptible to weather-related or low-light impacts
- Also used for pedestrians
- Less expensive option for non-intrusive detection

Disadvantages:
- More complex to maintain/adjust detection zone than video detection
- Accuracy on urban sidewalks with crossing sidewalk traffic can result in false detection calls

Push Button: Commonly used at signalized intersections to detect pedestrians, push buttons can also be used to detect bicycles at the path crossings, particularly in a multi-modal path condition. Current specifications for pushbuttons require little pressure to activate the buttons and send a detection call to the signal. Careful consideration is needed for bicycle use to avoid requiring bicyclists to dismount from their bicycle to activate the button; poor placement will likely result in poor compliance of the path crossings by bicyclists.

Advantages:
- Reliable detection for pedestrians and bicyclists
- Durable
- Can provide audio/visual cues for visually- or hearing-impaired pedestrians and bicyclists

Disadvantages:
- Placement requirements for bicycle path use
- Additional equipment may potentially conflict with service vehicles

PUSH
BUTTON
FOR
Portland, OR

Push Buttons

It should be noted that the City of Cambridge has currently expressed a preference to implement pre-timed traffic signals at the proposed Grand Junction crossings, therefore eliminating the need for the various detection options described in this section. All capacity analysis conducted as part of this feasibility study assumes pre-timed traffic signals for the proposed Grand Junction crossings, coordinated with adjacent signals at Massachusetts Avenue at Vassar Street, Massachusetts Avenue at Albany Street, and Main Street at Vassar Street.

Intersection Layout

General Railway Considerations

The Manual on Uniform Traffic Control Devices (MUTCD) and the MBTA Commuter Rail Book for Standard Plans Track and Roadway are two references available for designing the intersection layout at a railroad crossing. Part 8 of the 2009 Edition of the MUTCD (Traffic Control for Railroad and Light Rail Transit Grade Crossings) offers guidance for pavement markings, signage, and signalization of the rail crossings for roadways and mixed-use paths. Within the MBTA Commuter Rail Book, there are standard details that show minimum offset requirements for vertical obstructions along typical track segments. Table 2 below compares the offset requirements from both of these documents.

Table 2: Intersection Layout Offsets

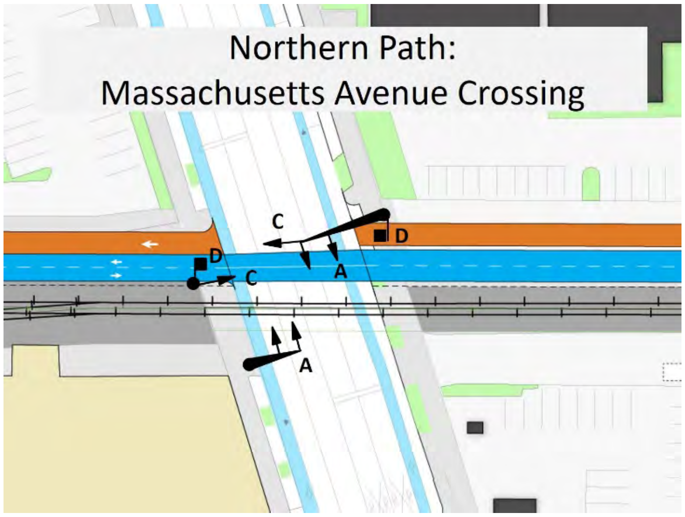
	MUTCD	**MBTA**
Vertical Obstructions* (Signs, Abutments, etc.)	12.0′ Minimum	8.5′ Minimum 12.0 ‘ Preferred
Active Crossing Equipment*	12.0′ Minimum	8.5′ Minimum 15.0′ Preferred
Passive Crossing Equipment*	12.0′ Minimum	8.5′ Minimum 12.0′ Preferred 20.0′ Maximum
Fencing (43″ maximum height)	6.25′ Minimum	No Guidance
***All measurements taken from railroad track centerline**		

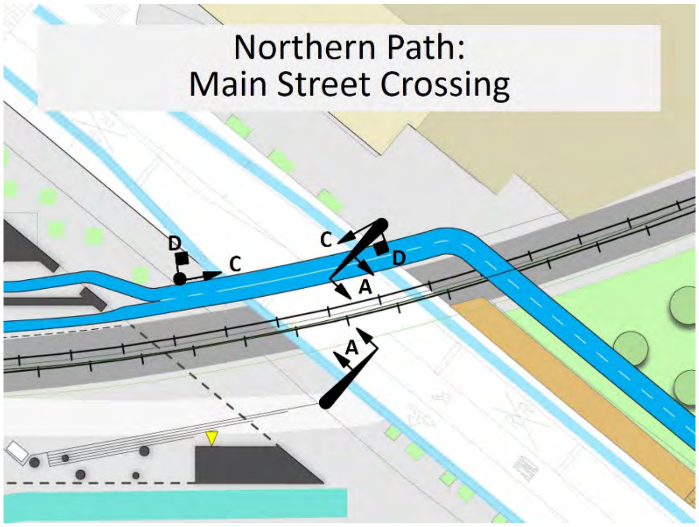
In general, based on MUTCD guidance, vertical obstructions should be placed 12 feet away from the track centerline with an absolute minimum offset of 8.5 feet. However, given the low-speed nature of existing and future train traffic, the proximity of existing and potential adjoining buildings, and current conditions along the eastern portion of the Grand Junction Corridor, a 10-foot offset from the centerline of the tracks is suggested to balance operational requirements for trains with accommodating path users and service vehicles along the corridor. With regard to potential equipment that would require applying the above offset requirements, these include bicycle signal posts and mast arms, and warning and guide signs.

Traffic control signals near highway-rail grade crossings are covered in Section 8C.09 of the MUTCD. The Grand Junction traffic signals will add additional signal design criteria to an already closely spaced intersection layout. The MUTCD specifies design criteria for railway pre-emption, signals, signal displays, and signage at closely spaced intersections that should be consulted in future design activities.

General Roadway Considerations

The signalization of the Grand Junction Path crossings at Main Street and Massachusetts Avenue would be feasible with the maintenance of minimum distances between the traffic signals and the stop bars. The traffic signals should be installed to provide clear indications to vehicles at each of the signalized intersections along Massachusetts Avenue and Main Street. This is especially important within the study area due to the close proximity of the signalized intersections. Ensuring that traffic signal heads are placed appropriately within the "cone of vision" described in the MUTCD (generally, an area at least 40 feet beyond the stop line and within 20° in either direction of the centerline of the approach lanes) for each intersection approach will help provide clear and definitive direction and guidance to vehicles traveling along these roadways. Installation of traffic signal equipment for the vehicular movements at the Grand Junction Path crossing is considered to be feasible and is depicted in the layout plans to the right.





Path at Roadway Considerations

Providing signalization and appropriate equipment for the bicycles and pedestrians along the Grand Junction path is crucial to ensure safe and efficient crossings at the study area roadways. The bicycle signal heads should be installed in order to provide maximum visibility for bicycles approaching from both directions of the path. The path design will need to allow for sufficient path queuing without blocking adjacent sidewalk pedestrian traffic. Equipment layout at the intersections will also need to consider turning requirements for service vehicles entering and exiting the adjacent service corridor. The crossings at Main Street and Massachusetts Avenue will be able to accommodate appropriate crossings for bicycles.

Path at Railway Considerations

With an adjacent active rail line, the interaction of path users and trains with pedestrians crossing the Grand Junction corridor at various points (including existing crossings near the Brain and Cognitive Science Building, at Pacific Street, and near Fort Washington Park) needs to be clearly managed to reduce conflict and ensure safety. Aligning the crossings to force path users to orient their view toward oncoming trains on the railroad tracks can effectively manage this conflict; this design concept also applies to the crossing of the Grand Junction Path itself across the tracks, as was considered previously in various path alignment options. Special note should be given to bicycles at railroad crossings in order to avoid conflict with not only trains and vehicles, but with the railroad tracks themselves. The crossings at Main Street and Massachusetts Avenue (including sidewalk areas) should be carefully designed to incorporate appropriate crossings for bicycles.

Pavement Markings

Pavement markings along both the path and the roadway provide clear delineation and guidance for vehicles, pedestrians, and bicycles travelling through the signalized path crossings. The MUTCD provide guidance on typical markings (such as yellow centerlines and white edge lines) that outline the desired path for bicyclists and other path users. Pavement markings, such as relocated stop bars and railroad markings, will help warn and direct vehicles on Massachusetts Avenue and Main Street to the potential conflicts at the path crossings. Additional pavement markings for pedestrians and bicycles such as crosswalks, the use of contrasting colors, and decorative stamped pavement patterns can further delineate space for path users and service vehicles alike at the signalized crossings.

Railroad Preemption

The railroad tracks that run adjacent to the Grand Junction Path are expected to remain active in the future, at or above current levels of activity. The current railroad detection method and preemption strategy should be accommodated and incorporated in any proposed Grand Junction Path signalization plan. In addition, future designs of the Grand Junction should investigate how the current flashing beacon equipment and additional potential measures (such as gate systems) can be incorporated to work in conjunction with proposed signalization of the Grand Junction Path crossings. The MUTCD provides standards and guidance that pertain to railroad crossings within closely spaced intersections, which should be consulted in any future designs completed as part of the Grand Junction Project.

Timing and Phasing Alternatives

Traffic signals in the vicinity of the Grand Junction Path are typically pre-timed, with concurrent pedestrian phasing and a 90 second cycle length. The path crossings at both Massachusetts Avenue and Main Street require signalization to ensure safe crossings for pedestrians and bicycles at each of the roadways. The simplest solution would be to insert a pre-timed signal with a 90 second cycle length and provide minor timing adjustments to the adjacent existing traffic signals. While this scenario would result in very good coordination and queue management for vehicles on Main Street and Massachusetts Avenue, significant delay may be incurred by the path users. Below is a brief discussion of the potential traffic signal timing and phasing considered as part of this feasibility study. It should be noted that all discussion presented in this memorandum is conceptual in nature and should be studied further prior to implementation. A summary of the capacity analysis and queue analysis is provided as an attachment to this memorandum.

Signal Detection

One way to limit the delay incurred by path users would be to provide detection for the path crossing phase. Signal detection would stop vehicular traffic on Massachusetts Avenue when activated, allowing pedestrians and bicyclists to cross the roadway more promptly than waiting for the exclusive crossing phase during a pre-timed cycle (depending on operational and timing strategies). However, frequent detection of the path crossing phase would more rapidly and more significantly impact vehicular operations along Massachusetts Avenue, potentially resulting in vehicle queue spillback into the adjacent intersections. As stated previously, the City of Cambridge has currently expressed a preference to implement pre-timed traffic signals at the proposed Grand Junction crossings, therefore eliminating the need for signal detection.

The feasibility of the signalization of the path crossing at Massachusetts Avenue and Main Street relies on a balance of delay incurred by path users with delay and queuing experienced by vehicles along the roadways. A potential solution to balance vehicular delay and path user delay would be to implement shorter cycle lengths than the existing 90 second cycle. There are a number of ways to implement shorter cycle lengths including half-cycle lengths for the path crossing signals or reduced cycle lengths for the path signal as well as the adjacent traffic signals. Another potentially feasible alternative includes the use of turn restricted phasing at the adjacent intersections, limiting the number of vehicles allowed to travel towards the crossing when the crossing phase is activated. Below is a more detailed description of the various alternatives and the associated traffic operation results.

Half-Cycle Length – Alternative 1

Providing a 45-second cycle at the proposed path crossing signals at Main Street and Massachusetts Avenue – which is half of the 90-second cycle currently in place – allows for the continued use of coordinated, pre-timed traffic signals under existing operational conditions while limiting the delay incurred by the path users. The half-cycle length does interrupt the Main Street and Massachusetts Avenue traffic twice as frequently as the adjacent traffic signals at Vassar Street and Albany Street. This does not appear to be an issue at the Main Street path crossing as queues appear to be managed in the available queue storage. However, even with signal coordination between signals at Albany Street, the path crossing signal, and Vassar

Street, there is potential for vehicular queues to exceed the storage available along Massachusetts Avenue in a half-cycle length scenario. The traffic operations associated with the Alternative 1 signal timing and phasing, utilizing the existing condition peak hour volumes described previously, are summarized in Table 3 below.

Table 3: Alternative 1 (Half Cycle) Level-of-Service Summary Table

Location	Peak Hour		LOS	Delay	V/C
Main Street at Vassar Street/Galileo Galilei Way	AM	Overall	B	15.5	0.47
	PM	Overall	B	16.2	0.61
Main Street at Grand Junction Path	AM	Overall	A	7.40	0.47
	PM	Overall	B	11.1	0.54
Massachusetts Avenue at Vassar Street	AM	Overall	F	80.7	0.87
	PM	Overall	F	85.2	0.95
Massachusetts Avenue at Railroad Crossing	AM	Overall	D	44.9	0.65
	PM	Overall	D	49.2	0.68
Massachusetts Avenue at Albany Street	AM	Overall	D	36.5	0.74
	PM	Overall	C	34.6	0.66

1 Level-of-Service

2 Average delay in seconds per vehicle

3 Volume to capacity ratio

As seen in this table, each of the intersections are shown to operate at overall LOS D or better during the weekday morning and weekday afternoon peak hours, except for the intersection of Massachusetts Avenue and Vassar Street. The intersection of Massachusetts Avenue and Vassar Street is shown to operate at overall LOS F during both peak hours studied. Additionally, as seen in the queue summary provided as part of this memorandum, queues along Massachusetts Avenue are shown to exceed the available storage, potentially causing operational issues at both the crossing and at adjacent intersections. Therefore, implementing a half-cycle length at the Grand Junction Path crossing at Massachusetts Avenue may not be the best alternative for implementation. Additionally, the City of Cambridge has expressed that the implementation of a half cycle is not preferred, and therefore, should not be considered further. Synchro capacity analysis worksheets for Alternative 1 are provided as an attachment to this memorandum.

Shortened Cycle Length – Alternative 2

A shortened overall cycle length at the path crossings as well as the adjacent signalized intersections may also present an option to balance the delay occurred by path users and the impacts to vehicular traffic along the roadways. A uniform, shortened cycle length allows the traffic signals at the path crossings and adjacent to the path crossings to be pre-timed and placed in coordination. Table 4 summarizes the traffic operations expected with the implementation of a shortened 60 second cycle length at the study area intersections, utilizing the existing condition peak hour volumes described previously.

Table 4: Alternative 2 (Shortened Cycle) Level-of-Service Summary Table

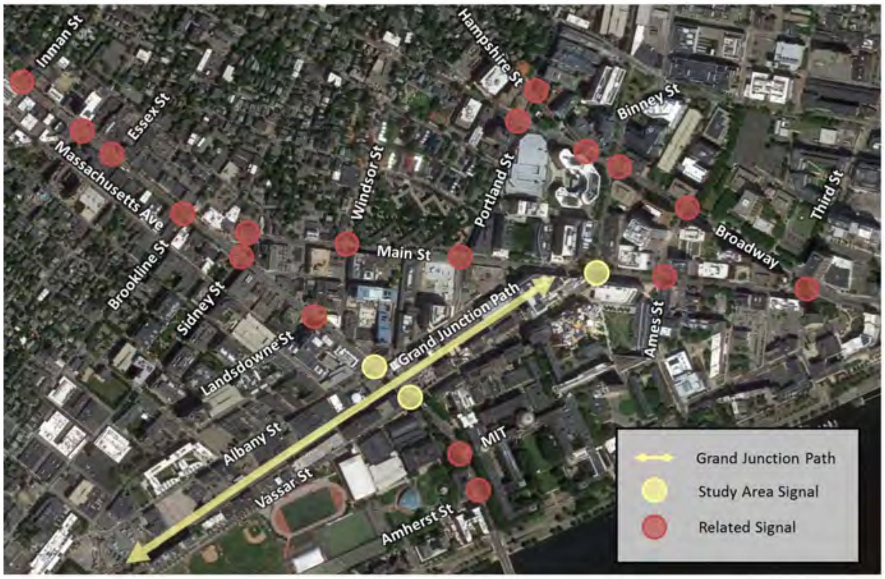
Location	Peak Hour		LOS	Delay	V/C
Main Street at Vassar Street/Galileo Galilei Way	AM	Overall	B	10.5	0.45
	PM	Overall	B	10.5	0.62
Main Street at Grand Junction Path	AM	Overall	B	15.9	0.47
	PM	Overall	B	10.9	0.54
Massachusetts Avenue at Vassar Street	AM	Overall	B	16.5	0.84
	PM	Overall	B	17.7	0.84
Massachusetts Avenue at Railroad Crossing	AM	Overall	A	5.0	0.44
	PM	Overall	A	5.8	0.51
Massachusetts Avenue at Albany Street	AM	Overall	B	11.3	0.75
	PM	Overall	B	11.5	0.70

1 Level-of-Service

2 Average delay in seconds per vehicle

3 Volume to capacity ratio

The level-of-service summary shows that the study area intersections would be expected to operate at overall LOS B or better during the weekday morning and weekday afternoon peak hours. The ability to successfully place the signals in coordination provides the most efficient operations for vehicular traffic along Main Street and Massachusetts Avenue. However, there are potential impacts to the surrounding traffic signals. Up to twenty nearby traffic signals in the area are pre-timed and in coordination with the traffic signals adjacent to the proposed path crossing as shown in the adjacent figure. Therefore, a shortened cycle length at these locations may have more widespread impacts and require additional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Massachusetts Ave
Brookline St
Sidney St
Landsdowne St
Albany St
Vassar St
Windsor St
Main St
Portland St
Hampshire St
Binney St
Third St
Broadway
Ames St
Grand Junction Path
MIT
Amherst St
Grand Junction Path
Study Area Signal
Related Signal

coordination beyond the Grand Junction project. Additionally, the City of Cambridge has expressed that the implementation of a shortened cycle is not preferred, and therefore, should not be considered further. Synchro capacity analysis worksheets for Alternative 2 are provided as an attachment to this memorandum.

Turn Restricted Phasing – Alternative 3

In order to manage queues more efficiently, turn-restricted phasing may be used, using blank-out signs. This type of phasing would restrict turning movements from Vassar Street and Albany Street onto Massachusetts Avenue towards the Grand Junction path intersection while the path crossing phase is occurring. Using this operational strategy limits the number of vehicles entering the limited queue storage, ideally eliminating extensive queuing along Massachusetts Avenue between Albany Street and Vassar Street. In order to accommodate this type of phasing, the adjacent intersections at Albany Street and Vassar Street may need to be reconfigured. The eastbound Albany Street approach and the westbound Vassar Street approach could be reconfigured to include a shared left-turn/thru lane and an exclusive right-turn lane. This allows other movements to continue to pass through the intersection while the path crossing phase is being executed. Table 5 summarizes the traffic operations expected with the implementation of turn-restricted phasing at the Massachusetts Avenue study area intersections, utilizing the existing condition peak hour volumes described earlier.

Table 5: Alternative 3 (Turn Restricted) Level-of-Service Summary Table

Location	**Peak Hour**		**LOS**	**Delay**	**V/C**
Massachusetts Avenue at Vassar Street	AM	Overall	C	26.5	0.89
	PM	Overall	C	33.2	0.98
Massachusetts Avenue at Railroad Crossing	AM	Overall	A	1.3	0.37
	PM	Overall	A	1.6	0.39
Massachusetts Avenue at Albany Street	AM	Overall	D	37.1	1.04
	PM	Overall	C	27.0	0.90

1 Level-of-Service

2 Average delay in seconds per vehicle

3 Volume to capacity ratio

As indicated in Table 5, each of the study area intersections are shown to operate at overall LOS D or better during the weekday morning and weekday afternoon peak hours. Queue are expected to be managed within the available queue storage along Massachusetts Avenue. Additional equipment beyond the blank-out signs, such as turn arrow signal heads at specific locations, may be required for this option to be feasible. It should also be noted that the reconfiguration of the intersection approaches may result in less than ideal alignment of lanes across Massachusetts Avenue at Albany Street and Vassar Street; additional pavement markings through the intersection can be used to overcome this issue and safely guide traffic to the proper departure lanes. Due to acceptable operations at the Main Street and Vassar Street intersection under different signal alternatives, a turn restricted approach was not investigated for the Main Street crossing, although this strategy can be implemented at the Main Street/Vassar Street/Galileo Galilei Way intersection as well. As stated previously, the City of Cambridge has noted that they do not support the use of blank-out signs to enforce conditional turn restrictions at signalized intersections. Therefore, further investigation into this turn restricted phasing alternative was not considered. Synchro capacity analysis worksheets for Alternative 3 are attached to this memorandum.

Findings

Overall, the two path crossings at Massachusetts Avenue and Main Street can be signalized to allow for safe and efficient operations for all roadway and path users. Although the intersections along Massachusetts Avenue and Main Street are closely spaced, it will be possible to successfully signalize the Grand Junction Path crossings. Coordination with the City of Cambridge will be necessary to allow the path crossing signals to work in conjunction with adjacent existing signals in the study area. Aside from the installation of two new signals at the path crossings, additional signal equipment upgrades (including incorporation of existing and potential additional controls related to railroad pre-emption), timing adjustments, and revised pavement markings may be necessary to accommodate operational changes resulting from the introduction of bicycle and pedestrian traffic along the Grand Junction Path. Further investigation will be necessary to verify the potential traffic operations associated with the proposed Grand Junction Path crossing. However, as noted in this memorandum, the signalization of the proposed path crossings is considered to be feasible.

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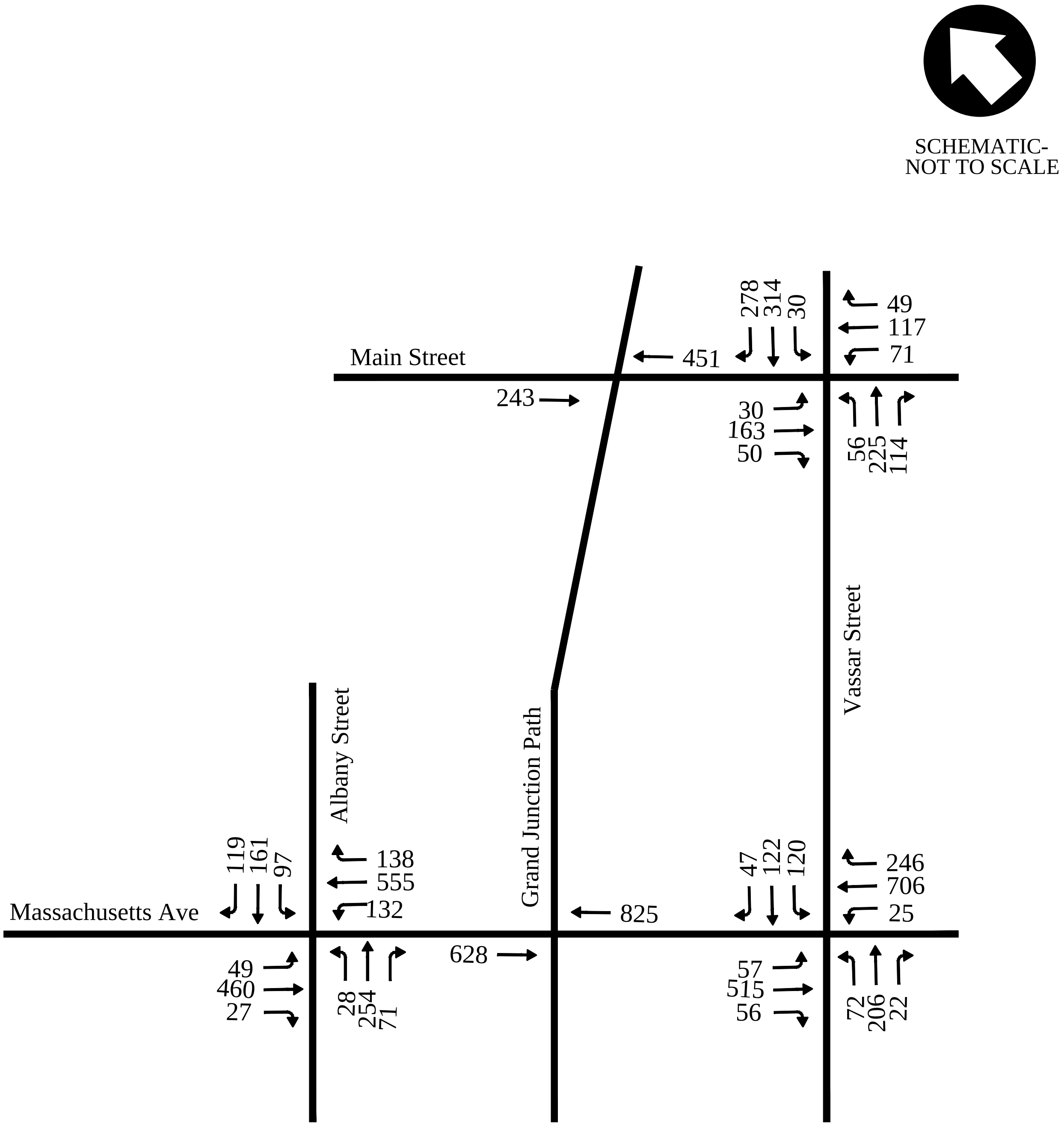
SCHEMATIC-
NOT TO SCALE
Main Street
278
314
30
49
117
71
451
243
30
163
50
56
225
114
Vassar Street
Grand Junction Path
Albany Street
Massachusetts Ave
119
161
97
138
555
132
49
460
27
28
254
71
628
825
47
122
120
246
706
25
57
515
56
72
206
22

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Figure 1
2014 Weekday Morning
Peak Hour Traffic Volumes
Grand Junction Path
Cambridge, Massachusetts

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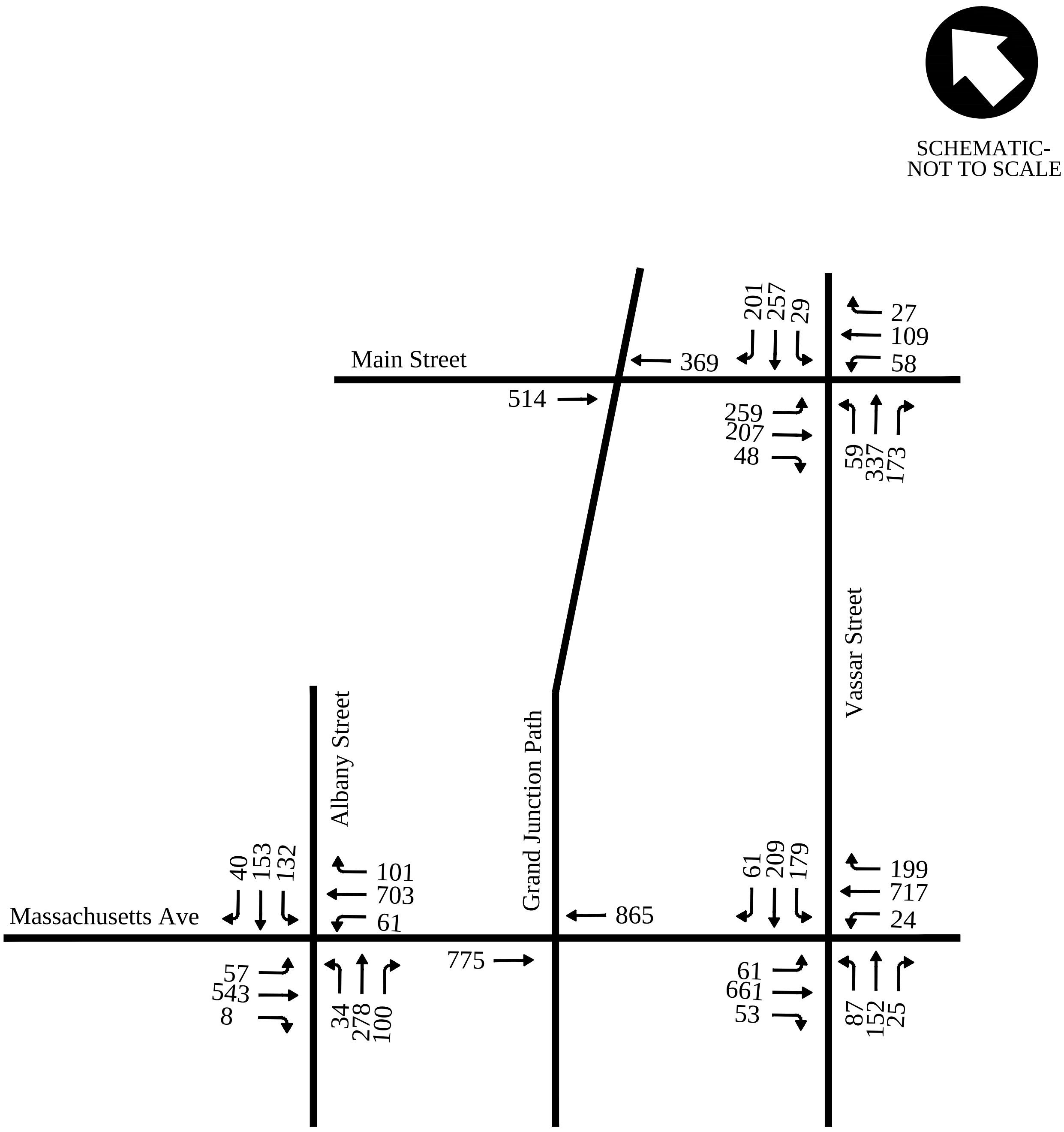

SCHEMATIC-
NOT TO SCALE
Main Street
Massachusetts Ave
Albany Street
Grand Junction Path
Vassar Street
369
514
201
257
29
27
109
58
259
207
48
59
337
173
865
775
40
153
132
101
703
61
57
543
8
34
278
100
61
209
179
199
717
24
61
661
53
87
152
25

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Figure 2
2014 Weekday Afternoon
Peak Hour Traffic Volumes
Grand Junction Path
Cambridge, Massachusetts

Attachments

Grand Junction Path
Traffic Signal Analysis and Feasibility

- Existing Capacity Analysis Worksheets
- Alternative 1 Capacity Analysis Worksheets
- Alternative 2 Capacity Analysis Worksheets
- Alternative 3 Capacity Analysis Worksheets
- LOS/Queue Summary Tables

2: Railroad Crossing/Grand Junction Path & Mass Ave.

Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Volume (vph)	0	628	0	0	825	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			200			216			232	
Travel Time (s)		4.5			4.5			4.9			5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	683	0	0	897	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		6			2			4			8	
Permitted Phases												
Total Split (s)		24.0			24.0			21.0			21.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Act Effct Green (s)		39.0			39.0							
Actuated g/C Ratio		1.00			1.00							
v/c Ratio		0.19			0.25							
Control Delay		0.1			0.2							
Queue Delay		0.0			0.0							
Total Delay		0.1			0.2							
LOS		A			A							
Approach Delay		0.1			0.2							
Approach LOS		A			A							
Queue Length 50th (ft)		0			0							
Queue Length 95th (ft)		0			0							
Internal Link Dist (ft)		116			120			136			152	
Turn Bay Length (ft)												
Base Capacity (vph)		3539			3539							
Starvation Cap Reductn		0			0							
Spillback Cap Reductn		0			0							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.19			0.25							

Intersection Summary

Area Type: Other

Cycle Length: 45

Actuated Cycle Length: 39

Control Type: Actuated-Uncoordinated

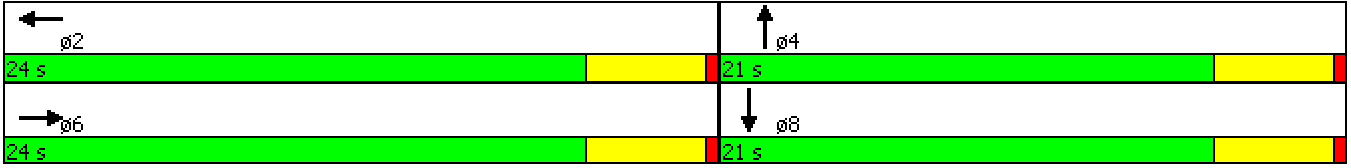
Maximum v/c Ratio: 0.25

Intersection Signal Delay: 0.2 Intersection LOS: A

Intersection Capacity Utilization 26.6% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Railroad Crossing/Grand Junction Path & Mass Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰↱		↰	↑	↱
Volume (vph)	30	163	50	71	117	49	56	225	114	30	314	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		75
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.73	0.92		0.80	0.89			0.91		0.86		0.89
Frt		0.965			0.956			0.957				0.850
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1770	1654	0	1770	1590	0	0	3069	0	1770	1863	1583
Flt Permitted	0.626			0.573				0.842		0.459		
Satd. Flow (perm)	854	1654	0	850	1590	0	0	2589	0	739	1863	1408
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			32			86				101
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1009			483			1619			777	
Travel Time (s)		22.9			11.0			36.8			17.7	
Confl. Peds. (#/hr)	348		110	110		348	27		98	98		27
Confl. Bikes (#/hr)			36			13			21			21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	231	0	77	180	0	0	430	0	33	341	302
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Total Split (s)	47.0	47.0		47.0	47.0		43.0	43.0		43.0	43.0	43.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Act Effct Green (s)	43.0	43.0		43.0	43.0			39.0		39.0	39.0	39.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48			0.43		0.43	0.43	0.43
v/c Ratio	0.08	0.29		0.19	0.23			0.37		0.10	0.42	0.45
Control Delay	21.0	22.0		15.1	12.2			12.6		14.4	15.8	10.6
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	21.0	22.0		15.1	12.2			12.6		14.4	15.8	10.6
LOS	C	C		B	B			B		B	B	B
Approach Delay		21.9			13.1			12.6			13.4	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	13	92		24	47			70		8	80	33
Queue Length 95th (ft)	m17	m113		52	88			m93		m16	137	90
Internal Link Dist (ft)		929			403			1539			697	
Turn Bay Length (ft)												75
Base Capacity (vph)	408	802		406	776			1170		320	807	667
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.08	0.29		0.19	0.23			0.37		0.10	0.42	0.45

Intersection Summary	
Area Type:	Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 58 (64%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.45

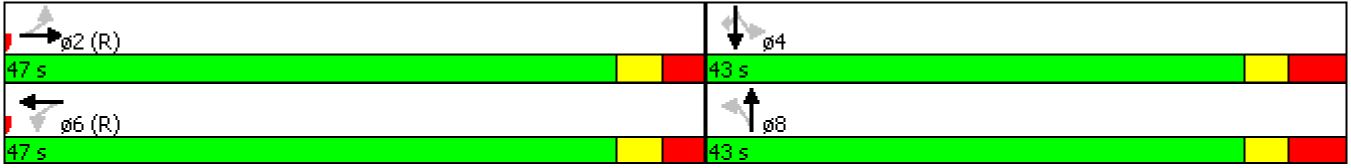
Intersection Signal Delay: 14.5 Intersection LOS: B

Intersection Capacity Utilization 60.5% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 199: Vassar Street/Western Connector & Main Street



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↱			↰↑↑↱		↰	↑↱		↰	↑↱	
Volume (vph)	57	515	56	25	706	246	72	206	22	120	122	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		0	180		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.92		0.84	0.98		0.86	0.94	
Frt		0.987			0.962			0.985			0.958	
Flt Protected		0.995			0.999		0.950			0.950		
Satd. Flow (prot)	0	3291	0	0	3133	0	1770	1793	0	1770	1678	0
Flt Permitted		0.657			0.924		0.950			0.950		
Satd. Flow (perm)	0	2173	0	0	2887	0	1494	1793	0	1522	1678	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			64			6			22	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			219			578			1619	
Travel Time (s)		4.5			5.0			13.1			36.8	
Confl. Peds. (#/hr)	170		219	219		170	119		117	117		119
Confl. Bikes (#/hr)			153			74			51			14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	683	0	0	1061	0	78	248	0	130	184	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2			6								
Total Split (s)	42.0	42.0		42.0	42.0		15.0	31.0		17.0	33.0	
Total Lost Time (s)		4.0			4.0		7.0	7.0		7.0	7.0	
Act Effct Green (s)		38.0			38.0		7.7	24.3		9.7	29.0	
Actuated g/C Ratio		0.42			0.42		0.09	0.27		0.11	0.32	
v/c Ratio		0.74			0.85		0.51	0.51		0.68	0.33	
Control Delay		27.2			29.7		51.7	31.6		74.0	18.6	
Queue Delay		52.6			0.0		0.0	0.0		0.0	0.0	
Total Delay		79.8			29.7		51.7	31.6		74.0	18.6	
LOS		E			C		D	C		E	B	
Approach Delay		79.8			29.7			36.4			41.5	
Approach LOS		E			C			D			D	
Queue Length 50th (ft)		163			262		43	117		79	34	
Queue Length 95th (ft)		235			#357		88	191		#158	111	
Internal Link Dist (ft)		120			139			498			1539	
Turn Bay Length (ft)							115			180		
Base Capacity (vph)		925			1255		157	487		196	555	
Starvation Cap Reductn		389			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.27			0.85		0.50	0.51		0.66	0.33	

Intersection Summary	
Area Type:	Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 46.5

Intersection LOS: D

Intersection Capacity Utilization 86.7%

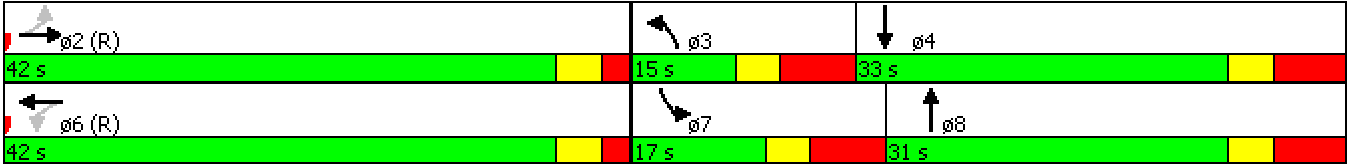
ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 219: Vassar Street & Mass Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱		↰	↱		↰	↱	
Volume (vph)	49	460	27	132	555	138	28	254	71	97	161	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.91		0.94	0.97		0.96	0.94	
Frt		0.993			0.975			0.967			0.936	
Flt Protected		0.995			0.992		0.950			0.950		
Satd. Flow (prot)	0	3413	0	0	3207	0	1770	1752	0	1770	1639	0
Flt Permitted		0.793			0.707		0.476			0.424		
Satd. Flow (perm)	0	2705	0	0	2230	0	830	1752	0	755	1639	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			36			19			51	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		533			196			404			675	
Travel Time (s)		12.1			4.5			9.2			15.3	
Confl. Peds. (#/hr)	121		147	147		121	73		59	59		73
Confl. Bikes (#/hr)			125			47			38			22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	582	0	0	896	0	30	353	0	105	304	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Total Split (s)	48.0	48.0		48.0	48.0		42.0	42.0		42.0	42.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Act Effct Green (s)		44.0			44.0		38.0	38.0		38.0	38.0	
Actuated g/C Ratio		0.49			0.49		0.42	0.42		0.42	0.42	
v/c Ratio		0.44			0.81		0.09	0.47		0.33	0.42	
Control Delay		16.1			25.8		16.5	20.2		20.8	16.0	
Queue Delay		0.0			50.5		0.0	0.0		0.0	0.0	
Total Delay		16.1			76.3		16.5	20.2		20.8	16.0	
LOS		B			E		B	C		C	B	
Approach Delay		16.1			76.3			19.9			17.2	
Approach LOS		B			E			B			B	
Queue Length 50th (ft)		106			208		10	133		29	67	
Queue Length 95th (ft)		150			298		27	210		m54	m126	
Internal Link Dist (ft)		453			116			324			595	
Turn Bay Length (ft)												
Base Capacity (vph)		1326			1108		350	750		318	721	
Starvation Cap Reductn		0			432		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.44			1.33		0.09	0.47		0.33	0.42	

Intersection Summary

Area Type:	Other

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 79 (88%), Referenced to phase 2:EBTL and 5:, Start of Green

Control Type: Pretimed

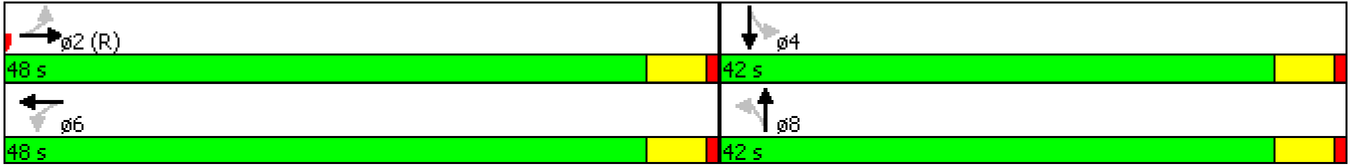
Maximum v/c Ratio: 0.81

Intersection Signal Delay: 40.7	Intersection LOS: D
Intersection Capacity Utilization 77.4%	ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 223: Albany Street & Mass Ave.



1: Railroad Crossing/Grand Junction Path & Mass Ave.

Weekday PM

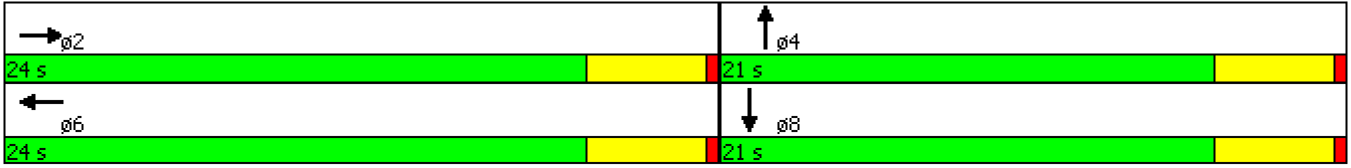
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Volume (vph)	0	775	0	0	865	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			199			363			303	
Travel Time (s)		4.5			4.5			8.3			6.9	
Confl. Bikes (#/hr)			96			229						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	842	0	0	940	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		2			6			4			8	
Permitted Phases												
Total Split (s)		24.0			24.0			21.0			21.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Act Effct Green (s)		39.0			39.0							
Actuated g/C Ratio		1.00			1.00							
v/c Ratio		0.24			0.27							
Control Delay		0.2			0.2							
Queue Delay		0.0			0.0							
Total Delay		0.2			0.2							
LOS		A			A							
Approach Delay		0.2			0.2							
Approach LOS		A			A							
Queue Length 50th (ft)		0			0							
Queue Length 95th (ft)		0			0							
Internal Link Dist (ft)		116			119			283			223	
Turn Bay Length (ft)												
Base Capacity (vph)		3539			3539							
Starvation Cap Reductn		0			0							
Spillback Cap Reductn		0			0							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.24			0.27							

Intersection Summary

Area Type: Other
Cycle Length: 45
Actuated Cycle Length: 39
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.27

Intersection Signal Delay: 0.2	Intersection LOS: A
Intersection Capacity Utilization 27.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Railroad Crossing/Grand Junction Path & Mass Ave.



	↰	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰↱		↰	↑	↱
Volume (vph)	259	207	48	58	109	27	59	337	173	29	257	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	150		0	0		0	0		100
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.74	0.90		0.70	0.93			0.91		0.92		0.80
Frt		0.972			0.970			0.954				0.850
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1770	1635	0	1770	1688	0	0	3077	0	1770	1863	1583
Flt Permitted	0.663			0.538				0.875		0.326		
Satd. Flow (perm)	908	1635	0	702	1688	0	0	2679	0	561	1863	1265
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			20			91				212
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1009			483			1619			777	
Travel Time (s)		22.9			11.0			36.8			17.7	
Confl. Peds. (#/hr)	250		184	184		250	63		85	85		63
Confl. Bikes (#/hr)			11			24			31			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	282	277	0	63	147	0	0	618	0	32	279	218
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Total Split (s)	50.0	50.0		50.0	50.0		40.0	40.0		40.0	40.0	40.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Act Effct Green (s)	46.0	46.0		46.0	46.0			36.0		36.0	36.0	36.0
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.40		0.40	0.40	0.40
v/c Ratio	0.61	0.33		0.18	0.17			0.55		0.14	0.37	0.34
Control Delay	22.6	13.3		13.5	10.7			13.9		19.4	20.9	4.6
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	22.6	13.3		13.5	10.7			13.9		19.4	20.9	4.6
LOS	C	B		B	B			B		B	C	A
Approach Delay		18.0			11.5			13.9			14.1	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	108	81		18	36			85		11	110	2
Queue Length 95th (ft)	198	134		43	69			m110		32	174	45
Internal Link Dist (ft)		929			403			1539			697	
Turn Bay Length (ft)	200			150								100
Base Capacity (vph)	464	844		358	872			1126		224	745	633
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.61	0.33		0.18	0.17			0.55		0.14	0.37	0.34

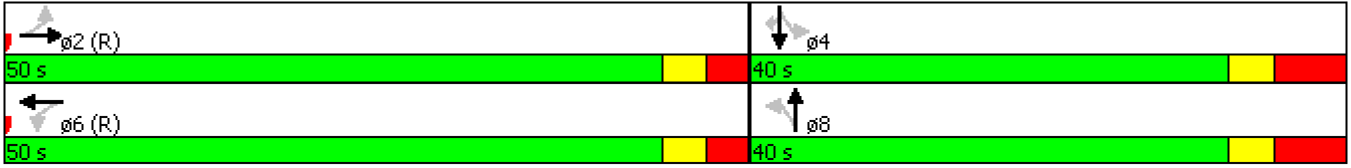
Intersection Summary	
Area Type:	Other

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 69 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.61

Intersection Signal Delay: 14.9	Intersection LOS: B
Intersection Capacity Utilization 72.8%	ICU Level of Service C

Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 199: Vassar Street/Binney Street & Main Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↱			↰↑↑↱		↰	↑↱		↰	↑↱	
Volume (vph)	61	661	53	24	717	199	87	152	25	179	209	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		0	180		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.96			0.91		0.85	0.97		0.87	0.94	
Frt		0.990			0.968			0.979			0.966	
Flt Protected		0.996			0.999		0.950			0.950		
Satd. Flow (prot)	0	3336	0	0	3116	0	1770	1776	0	1770	1692	0
Flt Permitted		0.632			0.893		0.950			0.950		
Satd. Flow (perm)	0	2117	0	0	2778	0	1501	1776	0	1543	1692	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			44			9			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		199			197			578			1619	
Travel Time (s)		4.5			4.5			13.1			36.8	
Confl. Peds. (#/hr)	379		341	341		379	135		99	99		135
Confl. Bikes (#/hr)			96			229			17			65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	842	0	0	1021	0	95	192	0	195	293	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6								
Total Split (s)	39.0	39.0		39.0	39.0		17.0	31.0		20.0	34.0	
Total Lost Time (s)		4.5			4.5		7.5	7.5		7.5	7.5	
Act Effct Green (s)		34.5			34.5		8.9	23.8		12.2	30.0	
Actuated g/C Ratio		0.38			0.38		0.10	0.26		0.14	0.33	
v/c Ratio		1.03			0.93		0.55	0.40		0.82	0.51	
Control Delay		68.4			42.1		50.8	29.2		72.5	20.3	
Queue Delay		28.4			0.0		0.0	0.0		0.0	0.0	
Total Delay		96.8			42.1		50.8	29.2		72.5	20.3	
LOS		F			D		D	C		E	C	
Approach Delay		96.8			42.1			36.3			41.1	
Approach LOS		F			D			D			D	
Queue Length 50th (ft)		~271			277		52	86		117	81	
Queue Length 95th (ft)		#391			#415		101	148		#227	126	
Internal Link Dist (ft)		119			117			498			1539	
Turn Bay Length (ft)							115			180		
Base Capacity (vph)		817			1092		186	476		245	574	
Starvation Cap Reductn		277			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.56			0.93		0.51	0.40		0.80	0.51	

Intersection Summary	
Area Type:	Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

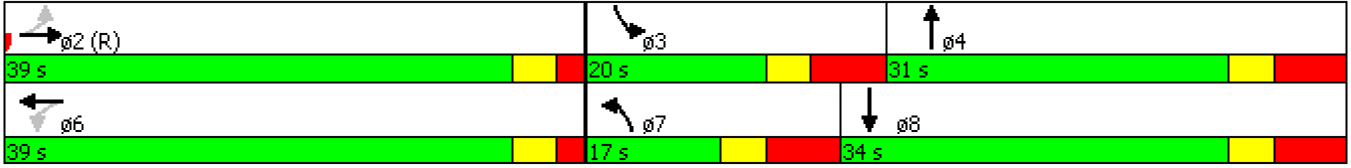
Intersection Signal Delay: 58.8	Intersection LOS: E
Intersection Capacity Utilization 94.4%	ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 219: Vassar Street & Mass Ave.



223: Albany Street & Mass Ave.

Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↱			↰↱		↰	↱		↰	↱	
Volume (vph)	57	543	8	61	703	101	34	278	100	132	153	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.91		0.96	0.97		0.97	0.98	
Frt		0.998			0.982			0.960			0.969	
Flt Protected		0.995			0.997		0.950			0.950		
Satd. Flow (prot)	0	3486	0	0	3179	0	1770	1738	0	1770	1773	0
Flt Permitted		0.770			0.852		0.569			0.338		
Satd. Flow (perm)	0	2670	0	0	2682	0	1015	1738	0	612	1773	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			24			24			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		539			196			404			675	
Travel Time (s)		12.3			4.5			9.2			15.3	
Confl. Peds. (#/hr)	475		300	300		475	37		47	47		37
Confl. Bikes (#/hr)			61			136			32			25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	661	0	0	940	0	37	411	0	143	209	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Total Split (s)	51.0	51.0		51.0	51.0		39.0	39.0		39.0	39.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Act Effct Green (s)		47.0			47.0		35.0	35.0		35.0	35.0	
Actuated g/C Ratio		0.52			0.52		0.39	0.39		0.39	0.39	
v/c Ratio		0.47			0.67		0.09	0.60		0.60	0.30	
Control Delay		15.0			18.2		18.4	24.8		34.7	19.3	
Queue Delay		0.0			51.2		0.0	0.0		0.0	0.0	
Total Delay		15.0			69.4		18.4	24.8		34.7	19.3	
LOS		B			E		B	C		C	B	
Approach Delay		15.0			69.4			24.3			25.6	
Approach LOS		B			E			C			C	
Queue Length 50th (ft)		118			190		13	171		64	75	
Queue Length 95th (ft)		164			258		34	268		#136	129	
Internal Link Dist (ft)		459			116			324			595	
Turn Bay Length (ft)										50		
Base Capacity (vph)		1395			1412		394	690		238	696	
Starvation Cap Reductn		0			669		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.47			1.27		0.09	0.60		0.60	0.30	

Intersection Summary	
Area Type:	Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 20 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Control Type: Pretimed

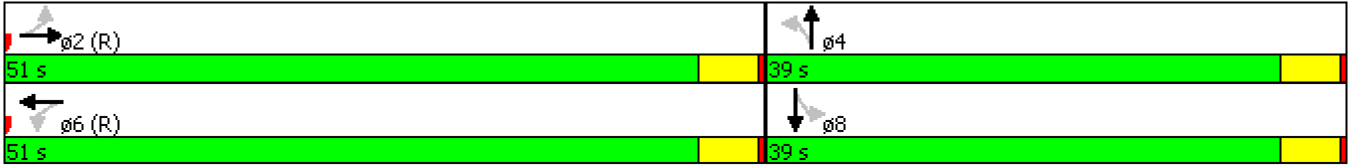
Maximum v/c Ratio: 0.67

Intersection Signal Delay: 39.6	Intersection LOS: D
Intersection Capacity Utilization 85.0%	ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 223: Albany Street & Mass Ave.



1: Railroad Crossing/Grand Junction Path & Mass Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Volume (vph)	0	628	0	0	825	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		197			198			363			1386	
Travel Time (s)		4.5			4.5			8.3			31.5	
Confl. Bikes (#/hr)			96			229			100			100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	683	0	0	897	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		2			6			4			8	
Permitted Phases												
Total Split (s)		22.0			22.0			23.0			23.0	
Total Lost Time (s)		4.5			4.5			3.0			3.0	
Act Effct Green (s)		17.5			17.5							
Actuated g/C Ratio		0.39			0.39							
v/c Ratio		0.50			0.65							
Control Delay		15.0			16.0							
Queue Delay		54.0			10.6							
Total Delay		69.0			26.6							
LOS		E			C							
Approach Delay		69.0			26.6							
Approach LOS		E			C							
Queue Length 50th (ft)		124			186							
Queue Length 95th (ft)		164			m230							
Internal Link Dist (ft)		117			118			283			1306	
Turn Bay Length (ft)												
Base Capacity (vph)		1376			1376							
Starvation Cap Reductn		449			456							
Spillback Cap Reductn		855			288							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		1.31			0.97							

Intersection Summary

Area Type: Other

Cycle Length: 45

Actuated Cycle Length: 45

Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.65

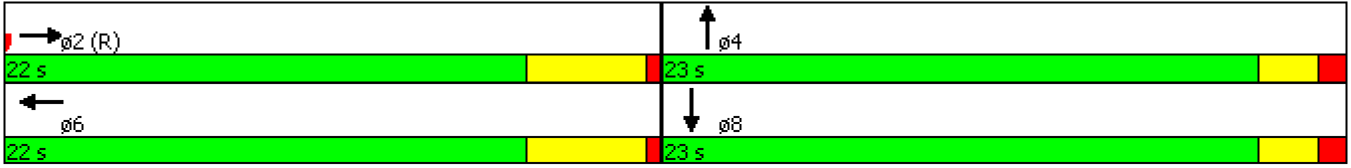
Intersection Signal Delay: 44.9 Intersection LOS: D

Intersection Capacity Utilization 26.6% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Railroad Crossing/Grand Junction Path & Mass Ave.



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Volume (vph)	0	243	0	0	451	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		745			264			135			652	
Travel Time (s)		16.9			6.0			3.1			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	264	0	0	490	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		2			6			8			4	
Permitted Phases												
Total Split (s)		23.0			23.0			22.0			22.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Act Effct Green (s)		25.0			25.0							
Actuated g/C Ratio		0.56			0.56							
v/c Ratio		0.26			0.47							
Control Delay		6.9			7.5							
Queue Delay		0.0			0.2							
Total Delay		6.9			7.7							
LOS		A			A							
Approach Delay		6.9			7.7							
Approach LOS		A			A							
Queue Length 50th (ft)		58			97							
Queue Length 95th (ft)		m62			116							
Internal Link Dist (ft)		665			184			55			572	
Turn Bay Length (ft)												
Base Capacity (vph)		1035			1035							
Starvation Cap Reductn		0			111							
Spillback Cap Reductn		0			0							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.26			0.53							

Intersection Summary

Area Type: Other

Cycle Length: 45

Actuated Cycle Length: 45

Offset: 35 (78%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Control Type: Actuated-Coordinated

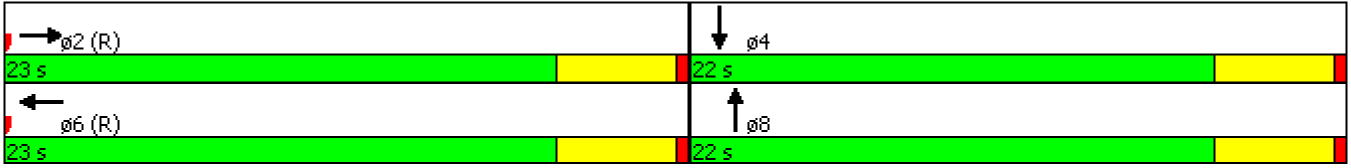
Maximum v/c Ratio: 0.47

Intersection Signal Delay: 7.4 Intersection LOS: A

Intersection Capacity Utilization 27.5%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Main Street



199: Vassar Street/Binney Street & Main Street

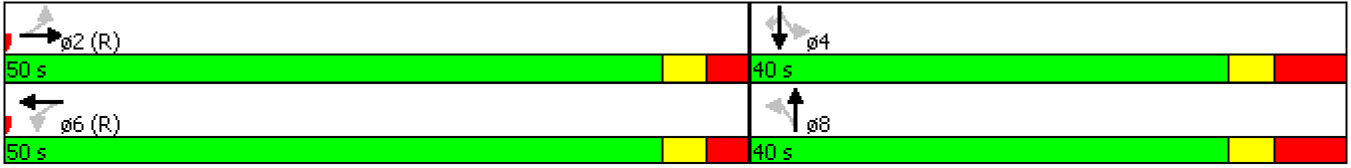
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰↑↱		↰	↑	↱
Volume (vph)	30	163	50	71	117	49	56	225	114	30	314	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		100
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.73	0.92		0.79	0.89			0.91		0.87		0.91
Frt		0.965			0.956			0.957				0.850
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1770	1662	0	1770	1591	0	0	3082	0	1770	1863	1583
Flt Permitted	0.631			0.581				0.818		0.449		
Satd. Flow (perm)	857	1662	0	858	1591	0	0	2526	0	724	1863	1434
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			34			81				120
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		264			487			1619			777	
Travel Time (s)		6.0			11.1			36.8			17.7	
Confl. Peds. (#/hr)	348		110	110		348	27		98	98		27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	231	0	77	180	0	0	430	0	33	341	302
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Total Split (s)	50.0	50.0		50.0	50.0		40.0	40.0		40.0	40.0	40.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Act Effct Green (s)	46.0	46.0		46.0	46.0			36.0		36.0	36.0	36.0
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.40		0.40	0.40	0.40
v/c Ratio	0.08	0.27		0.18	0.22			0.41		0.11	0.46	0.47
Control Delay	16.9	18.8		13.2	10.5			11.1		18.4	22.3	14.4
Queue Delay	0.0	0.6		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	16.9	19.4		13.2	10.5			11.1		18.4	22.3	14.4
LOS	B	B		B	B			B		B	C	B
Approach Delay		19.0			11.3			11.1			18.6	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	14	94		22	42			54		12	139	71
Queue Length 95th (ft)	34	136		48	80			m85		32	216	144
Internal Link Dist (ft)		184			407			1539			697	
Turn Bay Length (ft)				150								100
Base Capacity (vph)	438	861		438	829			1059		289	745	645
Starvation Cap Reductn	0	342		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			7		0	0	7
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.08	0.45		0.18	0.22			0.41		0.11	0.46	0.47

Intersection Summary

Area Type:	Other
Cycle Length: 90	

Actuated Cycle Length: 90
Offset: 69 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 15.5 Intersection LOS: B
Intersection Capacity Utilization 60.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 199: Vassar Street/Binney Street & Main Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↱			↰↱		↰	↱		↰	↱	
Volume (vph)	57	515	56	25	706	246	72	206	22	120	122	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		0	180		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.92		0.84	0.98		0.86	0.94	
Frt		0.987			0.962			0.985			0.958	
Flt Protected		0.995			0.999		0.950			0.950		
Satd. Flow (prot)	0	3310	0	0	3150	0	1770	1798	0	1770	1681	0
Flt Permitted		0.641			0.924		0.950			0.950		
Satd. Flow (perm)	0	2133	0	0	2903	0	1494	1798	0	1522	1681	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			62			6			21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		198			197			578			1619	
Travel Time (s)		4.5			4.5			13.1			36.8	
Confl. Peds. (#/hr)	170		219	219		170	119		117	117		119
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	683	0	0	1061	0	78	248	0	130	184	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6								
Total Split (s)	41.0	41.0		41.0	41.0		17.0	31.0		18.0	32.0	
Total Lost Time (s)		4.5			4.5		7.5	7.5		7.5	7.5	
Act Effct Green (s)		36.5			36.5		8.6	24.0		10.0	28.1	
Actuated g/C Ratio		0.41			0.41		0.10	0.27		0.11	0.31	
v/c Ratio		0.78			0.87		0.46	0.51		0.66	0.34	
Control Delay		42.8			44.8		47.4	32.0		65.6	16.5	
Queue Delay		53.0			48.5		61.4	0.0		0.0	0.0	
Total Delay		95.8			93.3		108.8	32.0		65.6	16.5	
LOS		F			F		F	C		E	B	
Approach Delay		95.8			93.3			50.4			36.8	
Approach LOS		F			F			D			D	
Queue Length 50th (ft)		166			301		42	118		79	38	
Queue Length 95th (ft)		206			#382		87	193		#152	69	
Internal Link Dist (ft)		118			117			498			1539	
Turn Bay Length (ft)							115			180		
Base Capacity (vph)		873			1214		186	483		206	539	
Starvation Cap Reductn		397			0		0	0		0	0	
Spillback Cap Reductn		0			404		110	0		0	5	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.43			1.31		1.03	0.51		0.63	0.34	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	

Actuated Cycle Length: 90

Offset: 2 (2%), Referenced to phase 2:EBTL, Start of Green

Control Type: Actuated-Coordinated

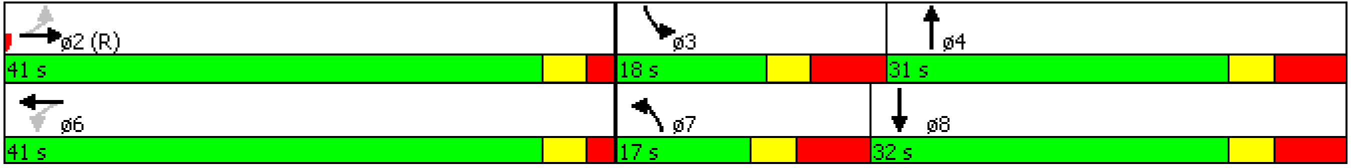
Maximum v/c Ratio: 0.87

Intersection Signal Delay: 80.7	Intersection LOS: F
Intersection Capacity Utilization 88.3%	ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.
  Queue shown is maximum after two cycles.

Splits and Phases: 219: Vassar Street & Mass Ave.



223: Albany Street & Mass Ave.

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↱			↰↱		↰	↱		↰	↱	
Volume (vph)	49	460	27	132	555	138	28	254	71	97	161	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.92		0.94	0.98		0.96	0.94	
Frt		0.993			0.975			0.967			0.936	
Flt Protected		0.995			0.992		0.950			0.950		
Satd. Flow (prot)	0	3423	0	0	3221	0	1770	1758	0	1770	1645	0
Flt Permitted		0.808			0.718		0.457			0.402		
Satd. Flow (perm)	0	2763	0	0	2273	0	798	1758	0	717	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			39			18			48	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1563			197			404			675	
Travel Time (s)		35.5			4.5			9.2			15.3	
Confl. Peds. (#/hr)	121		147	147		121	73		59	59		73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	582	0	0	896	0	30	353	0	105	304	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Total Split (s)	51.0	51.0		51.0	51.0		39.0	39.0		39.0	39.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Act Effct Green (s)		47.0			47.0		35.0	35.0		35.0	35.0	
Actuated g/C Ratio		0.52			0.52		0.39	0.39		0.39	0.39	
v/c Ratio		0.40			0.74		0.10	0.51		0.38	0.45	
Control Delay		13.8			17.7		18.6	23.0		15.4	10.5	
Queue Delay		0.6			50.4		0.0	0.0		0.0	0.0	
Total Delay		14.4			68.2		18.6	23.0		15.4	10.5	
LOS		B			E		B	C		B	B	
Approach Delay		14.4			68.2			22.6			11.8	
Approach LOS		B			E			C			B	
Queue Length 50th (ft)		97			143		11	142		20	39	
Queue Length 95th (ft)		137			205		29	224		m32	m67	
Internal Link Dist (ft)		1483			117			324			595	
Turn Bay Length (ft)										50		
Base Capacity (vph)		1447			1205		310	694		278	669	
Starvation Cap Reductn		0			436		0	0		0	0	
Spillback Cap Reductn		470			0		0	2		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.60			1.17		0.10	0.51		0.38	0.45	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	

Actuated Cycle Length: 90

Offset: 20 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Control Type: Pretimed

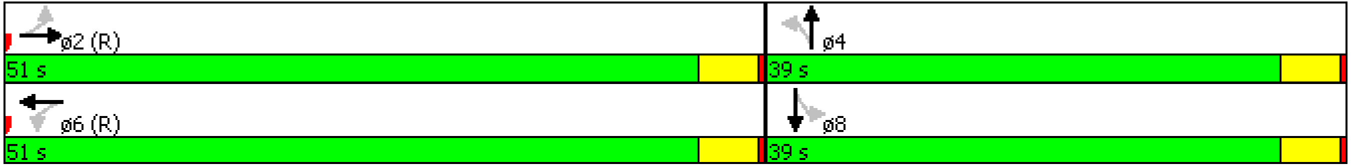
Maximum v/c Ratio: 0.74

Intersection Signal Delay: 36.5	Intersection LOS: D
Intersection Capacity Utilization 77.4%	ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 223: Albany Street & Mass Ave.



1: Railroad Crossing/Grand Junction Path & Mass Ave.

Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Volume (vph)	0	775	0	0	865	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		197			198			363			1386	
Travel Time (s)		4.5			4.5			8.3			31.5	
Confl. Peds. (#/hr)			61			396						
Confl. Bikes (#/hr)			96			229			100			100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	842	0	0	940	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		2			6			4			8	
Permitted Phases												
Total Split (s)		22.0			22.0			23.0			23.0	
Total Lost Time (s)		4.5			4.5			3.0			3.0	
Act Effct Green (s)		17.5			17.5							
Actuated g/C Ratio		0.39			0.39							
v/c Ratio		0.61			0.68							
Control Delay		16.2			16.4							
Queue Delay		52.7			15.2							
Total Delay		68.9			31.6							
LOS		E			C							
Approach Delay		68.9			31.6							
Approach LOS		E			C							
Queue Length 50th (ft)		174			193							
Queue Length 95th (ft)		222			m245							
Internal Link Dist (ft)		117			118			283			1306	
Turn Bay Length (ft)												
Base Capacity (vph)		1376			1376							
Starvation Cap Reductn		399			436							
Spillback Cap Reductn		772			228							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		1.39			1.00							

Intersection Summary

Area Type: Other
Cycle Length: 45
Actuated Cycle Length: 45
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.68

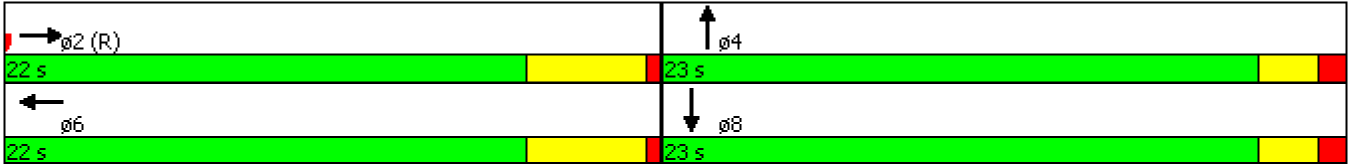
Intersection Signal Delay: 49.2 Intersection LOS: D

Intersection Capacity Utilization 27.7% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Railroad Crossing/Grand Junction Path & Mass Ave.



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Volume (vph)	0	514	0	0	369	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		745			264			135			652	
Travel Time (s)		16.9			6.0			3.1			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	559	0	0	401	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		2			6			8			4	
Permitted Phases												
Total Split (s)		23.0			23.0			22.0			22.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Act Effct Green (s)		25.0			25.0							
Actuated g/C Ratio		0.56			0.56							
v/c Ratio		0.54			0.39							
Control Delay		13.1			8.1							
Queue Delay		0.0			0.2							
Total Delay		13.1			8.3							
LOS		B			A							
Approach Delay		13.1			8.3							
Approach LOS		B			A							
Queue Length 50th (ft)		179			100							
Queue Length 95th (ft)		264			121							
Internal Link Dist (ft)		665			184			55			572	
Turn Bay Length (ft)												
Base Capacity (vph)		1035			1035							
Starvation Cap Reductn		0			145							
Spillback Cap Reductn		18			0							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.55			0.45							

Intersection Summary

Area Type: Other

Cycle Length: 45

Actuated Cycle Length: 45

Offset: 35 (78%), Referenced to phase 2:EBT and 6:WBT, Start of Green

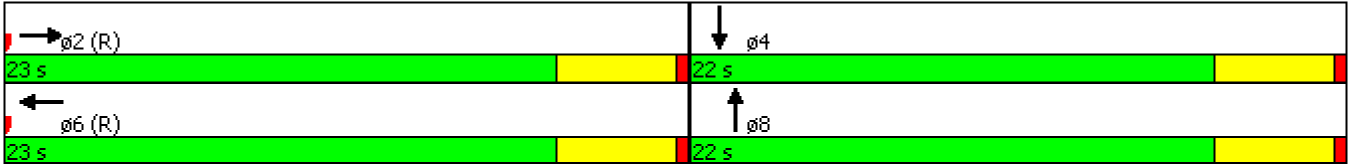
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 11.1 Intersection LOS: B

Intersection Capacity Utilization 30.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 20: Main Street


ø2 (R)
23 s
ø4
22 s
ø6 (R)
23 s
ø8
22 s

199: Vassar Street/Binney Street & Main Street

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰↑↱		↰	↑	↱
Volume (vph)	259	207	48	58	109	27	59	337	173	29	257	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		100
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.74	0.90		0.70	0.93			0.91		0.92		0.81
Frt		0.972			0.970			0.954				0.850
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1770	1636	0	1770	1689	0	0	3100	0	1770	1863	1583
Flt Permitted	0.663			0.538				0.875		0.326		
Satd. Flow (perm)	908	1636	0	702	1689	0	0	2698	0	561	1863	1277
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			20			91				212
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		264			483			1619			777	
Travel Time (s)		6.0			11.0			36.8			17.7	
Confl. Peds. (#/hr)	250		184	184		250	63		85	85		63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	282	277	0	63	147	0	0	618	0	32	279	218
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Total Split (s)	50.0	50.0		50.0	50.0		40.0	40.0		40.0	40.0	40.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Act Effct Green (s)	46.0	46.0		46.0	46.0			36.0		36.0	36.0	36.0
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.40		0.40	0.40	0.40
v/c Ratio	0.61	0.33		0.18	0.17			0.55		0.14	0.37	0.34
Control Delay	24.7	15.9		10.7	8.0			14.8		19.4	20.9	4.5
Queue Delay	3.5	1.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	28.2	17.0		10.7	8.0			14.8		19.4	20.9	4.5
LOS	C	B		B	A			B		B	C	A
Approach Delay		22.6			8.8			14.8			14.1	
Approach LOS		C			A			B			B	
Queue Length 50th (ft)	119	114		24	48			88		11	110	2
Queue Length 95th (ft)	129	124		m42	74			m127		32	174	45
Internal Link Dist (ft)		184			403			1539			697	
Turn Bay Length (ft)				150								100
Base Capacity (vph)	464	845		358	873			1133		224	745	638
Starvation Cap Reductn	106	348		0	0			0		0	0	0
Spillback Cap Reductn	0	53		0	0			1		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.79	0.56		0.18	0.17			0.55		0.14	0.37	0.34

Intersection Summary	
Area Type:	Other
Cycle Length: 90	

Actuated Cycle Length: 90

Offset: 69 (77%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.61

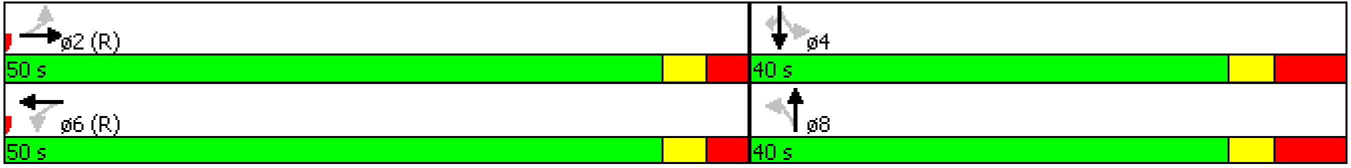
Intersection Signal Delay: 16.2 Intersection LOS: B

Intersection Capacity Utilization 72.8% ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 199: Vassar Street/Binney Street & Main Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↱			↰↑↑↱		↰	↑↱		↰	↑↱	
Volume (vph)	61	661	53	24	717	199	87	152	25	179	209	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		0	180		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.96			0.92		0.85	0.98		0.87	0.95	
Frt		0.990			0.968			0.979			0.966	
Flt Protected		0.996			0.999		0.950			0.950		
Satd. Flow (prot)	0	3346	0	0	3153	0	1770	1779	0	1770	1704	0
Flt Permitted		0.654			0.916		0.950			0.950		
Satd. Flow (perm)	0	2197	0	0	2883	0	1501	1779	0	1543	1704	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			45			9			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		198			197			578			1619	
Travel Time (s)		4.5			4.5			13.1			36.8	
Confl. Peds. (#/hr)	379		341	341		379	135		99	99		135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	842	0	0	1021	0	95	192	0	195	293	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6								
Total Split (s)	41.0	41.0		41.0	41.0		17.0	31.0		18.0	32.0	
Total Lost Time (s)		4.5			4.5		7.5	7.5		7.5	7.5	
Act Effct Green (s)		36.5			36.5		8.9	23.5		10.5	28.0	
Actuated g/C Ratio		0.41			0.41		0.10	0.26		0.12	0.31	
v/c Ratio		0.94			0.85		0.55	0.41		0.95	0.54	
Control Delay		53.9			43.8		50.8	29.3		99.5	22.7	
Queue Delay		47.6			49.1		82.9	0.0		0.0	0.0	
Total Delay		101.5			92.9		133.7	29.3		99.5	22.7	
LOS		F			F		F	C		F	C	
Approach Delay		101.5			92.9			63.9			53.4	
Approach LOS		F			F			E			D	
Queue Length 50th (ft)		205			291		52	86		120	82	
Queue Length 95th (ft)		#372			#365		101	148		#253	124	
Internal Link Dist (ft)		118			117			498			1539	
Turn Bay Length (ft)							115			180		
Base Capacity (vph)		896			1195		186	471		206	540	
Starvation Cap Reductn		407			0		0	0		0	0	
Spillback Cap Reductn		0			414		110	0		0	4	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		1.72			1.31		1.25	0.41		0.95	0.55	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	

Actuated Cycle Length: 90

Offset: 2 (2%), Referenced to phase 2:EBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

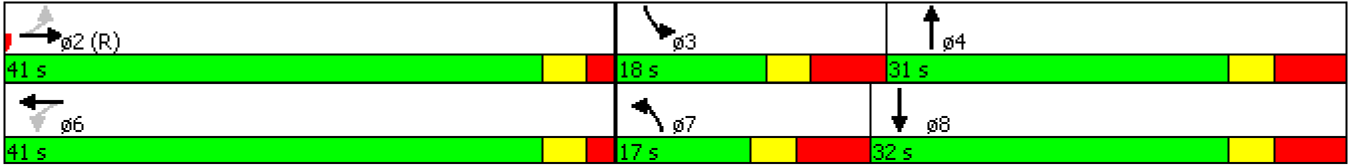
Intersection Signal Delay: 85.2 Intersection LOS: F

Intersection Capacity Utilization 94.4% ICU Level of Service F

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 219: Vassar Street & Mass Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↱			↰↑↑↱		↰	↑↱		↰	↑↱	
Volume (vph)	57	543	8	61	703	101	34	278	100	132	153	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.91		0.96	0.98		0.97	0.98	
Frt		0.998			0.982			0.960			0.969	
Flt Protected		0.995			0.997		0.950			0.950		
Satd. Flow (prot)	0	3487	0	0	3192	0	1770	1746	0	1770	1778	0
Flt Permitted		0.770			0.852		0.569			0.338		
Satd. Flow (perm)	0	2670	0	0	2693	0	1015	1746	0	612	1778	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			24			24			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		539			197			404			675	
Travel Time (s)		12.3			4.5			9.2			15.3	
Confl. Peds. (#/hr)	475		300	300		475	37		47	47		37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	661	0	0	940	0	37	411	0	143	209	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Total Split (s)	51.0	51.0		51.0	51.0		39.0	39.0		39.0	39.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Act Effct Green (s)		47.0			47.0		35.0	35.0		35.0	35.0	
Actuated g/C Ratio		0.52			0.52		0.39	0.39		0.39	0.39	
v/c Ratio		0.47			0.66		0.09	0.59		0.60	0.30	
Control Delay		8.1			12.0		18.4	24.8		29.3	14.7	
Queue Delay		1.4			50.4		0.0	0.0		0.0	0.0	
Total Delay		9.4			62.4		18.4	24.8		29.3	14.7	
LOS		A			E		B	C		C	B	
Approach Delay		9.4			62.4			24.2			20.6	
Approach LOS		A			E			C			C	
Queue Length 50th (ft)		147			133		13	171		49	53	
Queue Length 95th (ft)		199			196		34	267		#141	84	
Internal Link Dist (ft)		459			117			324			595	
Turn Bay Length (ft)										50		
Base Capacity (vph)		1395			1417		394	693		238	698	
Starvation Cap Reductn		0			570		0	0		0	0	
Spillback Cap Reductn		502			0		0	4		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.74			1.11		0.09	0.60		0.60	0.30	

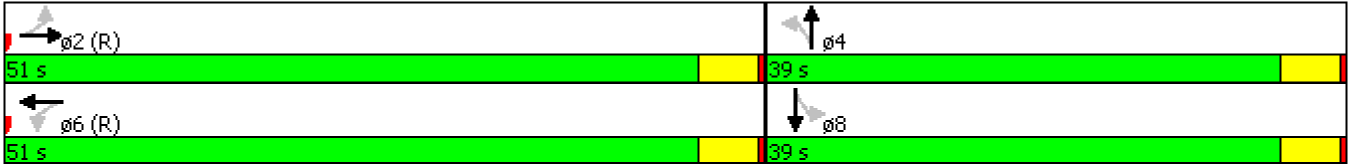
Intersection Summary

Area Type:	Other
Cycle Length: 90	

223: Albany Street & Mass Ave.

Actuated Cycle Length: 90
Offset: 20 (22%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 34.6 Intersection LOS: C
Intersection Capacity Utilization 85.0% ICU Level of Service E
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 223: Albany Street & Mass Ave.



2: Railroad Crossing/Grand Junction Path & Mass Ave.

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Volume (vph)	0	628	0	0	825	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			200			216			232	
Travel Time (s)		4.5			4.5			4.9			5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	683	0	0	897	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		6			2			4			8	
Permitted Phases												
Total Split (s)		39.0			39.0			21.0			21.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Act Effct Green (s)		34.5			34.5							
Actuated g/C Ratio		0.58			0.58							
v/c Ratio		0.34			0.44							
Control Delay		5.3			3.7							
Queue Delay		0.3			0.8							
Total Delay		5.6			4.5							
LOS		A			A							
Approach Delay		5.6			4.5							
Approach LOS		A			A							
Queue Length 50th (ft)		38			32							
Queue Length 95th (ft)		52			m38							
Internal Link Dist (ft)		116			120			136			152	
Turn Bay Length (ft)												
Base Capacity (vph)		2034			2034							
Starvation Cap Reductn		722			762							
Spillback Cap Reductn		62			0							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.52			0.71							

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 59 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Control Type: Pretimed

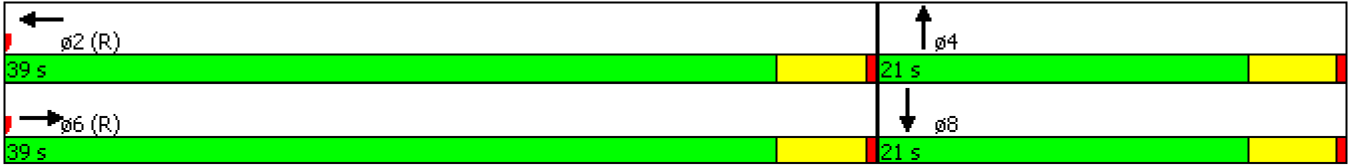
Maximum v/c Ratio: 0.44

Intersection Signal Delay: 5.0 Intersection LOS: A

Intersection Capacity Utilization 26.6%	ICU Level of Service A
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Railroad Crossing/Grand Junction Path & Mass Ave.



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Volume (vph)	0	243	0	0	451	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		719			289			619			652	
Travel Time (s)		16.3			6.6			14.1			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	264	0	0	490	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		2			6			8			4	
Permitted Phases												
Total Split (s)		38.0			38.0			22.0			22.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Act Effct Green (s)		33.5			33.5							
Actuated g/C Ratio		0.56			0.56							
v/c Ratio		0.25			0.47							
Control Delay		7.6			18.2							
Queue Delay		0.0			2.3							
Total Delay		7.6			20.4							
LOS		A			C							
Approach Delay		7.6			20.4							
Approach LOS		A			C							
Queue Length 50th (ft)		44			143							
Queue Length 95th (ft)		78			258							
Internal Link Dist (ft)		639			209			539			572	
Turn Bay Length (ft)												
Base Capacity (vph)		1040			1040							
Starvation Cap Reductn		0			402							
Spillback Cap Reductn		0			0							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.25			0.77							

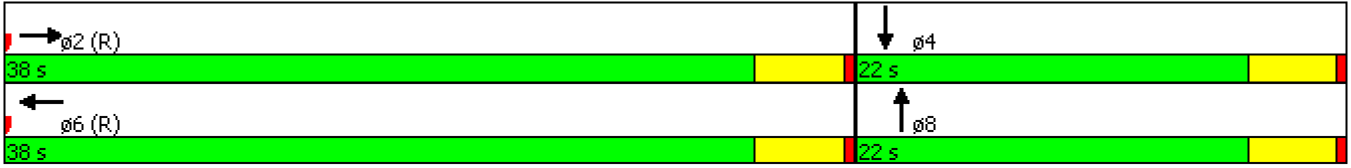
Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 15.9 Intersection LOS: B

Intersection Capacity Utilization 27.5% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 20: Main Street

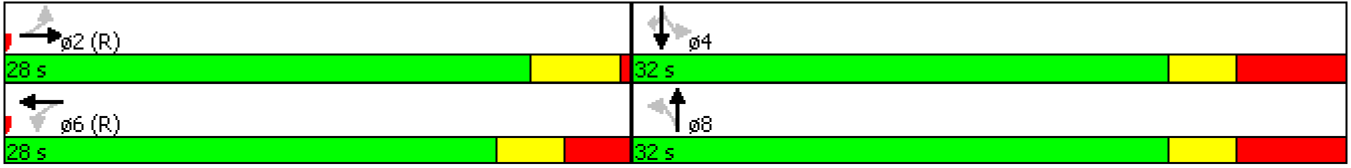

ø2 (R)
38 s
ø4
22 s
ø6 (R)
38 s
ø8
22 s

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰↱		↰	↑	↱
Volume (vph)	30	163	50	71	117	49	56	225	114	30	314	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		100
Storage Lanes	1		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor				0.85	0.90			0.94		0.90		
Frt		0.965			0.956			0.957				0.850
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1770	1798	0	1770	1609	0	0	3156	0	1770	1863	1583
Flt Permitted	0.644			0.592				0.860		0.491		
Satd. Flow (perm)	1200	1798	0	942	1609	0	0	2733	0	824	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			40			124				55
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		289			483			1619			777	
Travel Time (s)		6.6			11.0			36.8			17.7	
Confl. Peds. (#/hr)				110		348			98	98		
Confl. Bikes (#/hr)						13			21			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	231	0	77	180	0	0	430	0	33	341	302
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Total Split (s)	28.0	28.0		28.0	28.0		32.0	32.0		32.0	32.0	32.0
Total Lost Time (s)	4.5	4.5		4.0	6.0			4.0		4.0	4.0	8.0
Act Effct Green (s)	23.5	23.5		24.0	22.0			28.0		28.0	28.0	24.0
Actuated g/C Ratio	0.39	0.39		0.40	0.37			0.47		0.47	0.47	0.40
v/c Ratio	0.07	0.32		0.20	0.29			0.32		0.09	0.39	0.45
Control Delay	8.3	7.8		13.6	11.9			7.6		9.7	12.1	13.3
Queue Delay	0.0	0.0		0.0	0.2			0.0		0.0	0.0	0.0
Total Delay	8.3	7.8		13.6	12.1			7.6		9.7	12.1	13.3
LOS	A	A		B	B			A		A	B	B
Approach Delay		7.8			12.6			7.6			12.6	
Approach LOS		A			B			A			B	
Queue Length 50th (ft)	4	17		18	34			27		6	75	61
Queue Length 95th (ft)	11	32		43	74			m51		19	130	120
Internal Link Dist (ft)		209			403			1539			697	
Turn Bay Length (ft)				150								100
Base Capacity (vph)	470	722		376	615			1341		384	869	666
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	81			41		0	0	13
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.07	0.32		0.20	0.34			0.33		0.09	0.39	0.46

Intersection Summary	
Area Type:	Other

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 10.5 Intersection LOS: B
Intersection Capacity Utilization 61.9% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 199: Vassar Street/Binney Street & Main Street



219: Vassar Street & Mass Ave.

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱		↰	↑↱		↰	↑↱	
Volume (vph)	57	515	56	25	706	246	72	206	22	120	122	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		0	180		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.94		0.90	0.98		0.91	0.96	
Frt		0.987			0.962			0.985			0.958	
Flt Protected		0.995			0.999		0.950			0.950		
Satd. Flow (prot)	0	3319	0	0	3207	0	1770	1806	0	1770	1711	0
Flt Permitted		0.706			0.927		0.641			0.605		
Satd. Flow (perm)	0	2349	0	0	2966	0	1070	1806	0	1022	1711	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			93			11			27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			219			578			1619	
Travel Time (s)		4.5			5.0			13.1			36.8	
Confl. Peds. (#/hr)	170		219	219		170	119		117	117		119
Confl. Bikes (#/hr)			153			74			51			14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	683	0	0	1061	0	78	248	0	130	184	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Lost Time (s)		4.5			4.5		7.5	7.5		7.5	7.5	
Act Effct Green (s)		24.5			24.5		23.5	23.5		23.5	23.5	
Actuated g/C Ratio		0.41			0.41		0.39	0.39		0.39	0.39	
v/c Ratio		0.70			0.84		0.19	0.35		0.33	0.27	
Control Delay		9.3			22.4		13.5	14.0		17.5	13.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		9.3			22.4		13.5	14.0		17.5	13.8	
LOS		A			C		B	B		B	B	
Approach Delay		9.3			22.4			13.9			15.3	
Approach LOS		A			C			B			B	
Queue Length 50th (ft)		12			159		18	58		39	47	
Queue Length 95th (ft)		18			#273		43	107		79	92	
Internal Link Dist (ft)		120			139			498			1539	
Turn Bay Length (ft)							115			180		
Base Capacity (vph)		971			1266		419	714		400	686	
Starvation Cap Reductn		8			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.71			0.84		0.19	0.35		0.33	0.27	

Intersection Summary	
Area Type:	Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection

Control Type: Pretimed

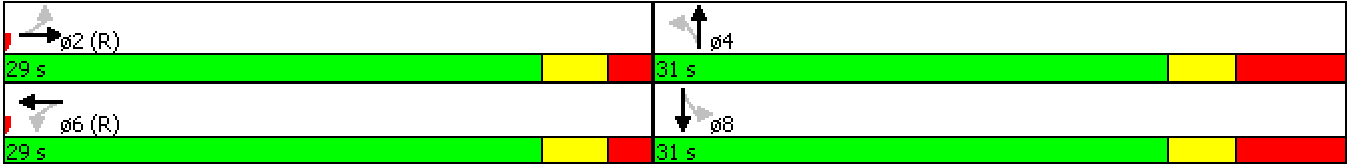
Maximum v/c Ratio: 0.84

Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 88.3%	ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.
  Queue shown is maximum after two cycles.

Splits and Phases: 219: Vassar Street & Mass Ave.



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱		↰	↑↱		↰	↑↱	
Volume (vph)	49	460	27	132	555	138	28	254	71	97	161	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.94		0.95	0.98		0.97	0.96	
Frt		0.993			0.975			0.967			0.936	
Flt Protected		0.995			0.992		0.950			0.950		
Satd. Flow (prot)	0	3434	0	0	3268	0	1770	1763	0	1770	1667	0
Flt Permitted		0.825			0.751		0.487			0.430		
Satd. Flow (perm)	0	2834	0	0	2429	0	864	1763	0	774	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			54			27			72	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		533			196			404			675	
Travel Time (s)		12.1			4.5			9.2			15.3	
Confl. Peds. (#/hr)	121		147	147		121	73		59	59		73
Confl. Bikes (#/hr)			125			47			38			22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	582	0	0	896	0	30	353	0	105	304	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Act Effct Green (s)		29.0			29.0		23.0	23.0		23.0	23.0	
Actuated g/C Ratio		0.48			0.48		0.38	0.38		0.38	0.38	
v/c Ratio		0.42			0.75		0.09	0.51		0.35	0.45	
Control Delay		11.0			8.1		12.8	16.2		17.6	12.8	
Queue Delay		0.0			0.1		0.0	0.0		0.0	0.0	
Total Delay		11.0			8.2		12.8	16.2		17.6	12.8	
LOS		B			A		B	B		B	B	
Approach Delay		11.0			8.2			15.9			14.0	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)		65			17		7	86		26	58	
Queue Length 95th (ft)		100			53		22	155		63	117	
Internal Link Dist (ft)		453			116			324			595	
Turn Bay Length (ft)										50		
Base Capacity (vph)		1375			1201		331	692		296	683	
Starvation Cap Reductn		0			18		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.42			0.76		0.09	0.51		0.35	0.45	

Intersection Summary	
Area Type:	Other

223: Albany Street & Mass Ave.

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 58 (97%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Control Type: Pretimed

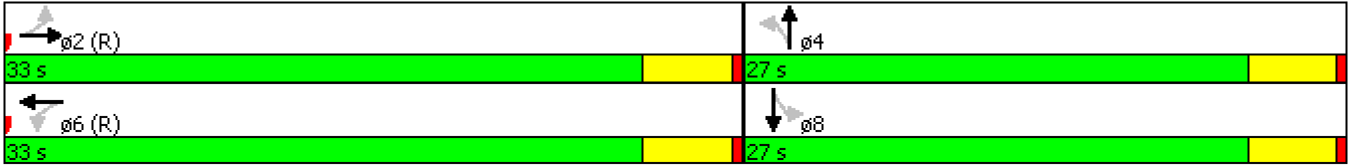
Maximum v/c Ratio: 0.75

Intersection Signal Delay: 11.3 Intersection LOS: B

Intersection Capacity Utilization 77.4% ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 223: Albany Street & Mass Ave.



1: Railroad Crossing/Grand Junction Path & Mass Ave.

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Volume (vph)	0	775	0	0	865	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		197			198			363			1386	
Travel Time (s)		4.5			4.5			8.3			31.5	
Confl. Peds. (#/hr)			61			396						
Confl. Bikes (#/hr)			96			229			100			100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	842	0	0	940	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		2			6			4			8	
Permitted Phases												
Total Split (s)		36.0			36.0			24.0			24.0	
Total Lost Time (s)		4.5			4.5			4.0			4.0	
Act Effct Green (s)		31.5			31.5							
Actuated g/C Ratio		0.52			0.52							
v/c Ratio		0.45			0.51							
Control Delay		6.4			4.4							
Queue Delay		0.3			0.6							
Total Delay		6.8			5.0							
LOS		A			A							
Approach Delay		6.8			5.0							
Approach LOS		A			A							
Queue Length 50th (ft)		59			40							
Queue Length 95th (ft)		76			m50							
Internal Link Dist (ft)		117			118			283			1306	
Turn Bay Length (ft)												
Base Capacity (vph)		1857			1857							
Starvation Cap Reductn		436			508							
Spillback Cap Reductn		135			0							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.59			0.70							

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 57 (95%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.51

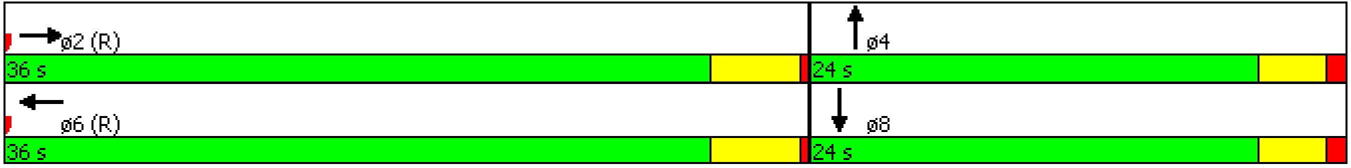
Intersection Signal Delay: 5.8 Intersection LOS: A

Intersection Capacity Utilization 27.7% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Railroad Crossing/Grand Junction Path & Mass Ave.



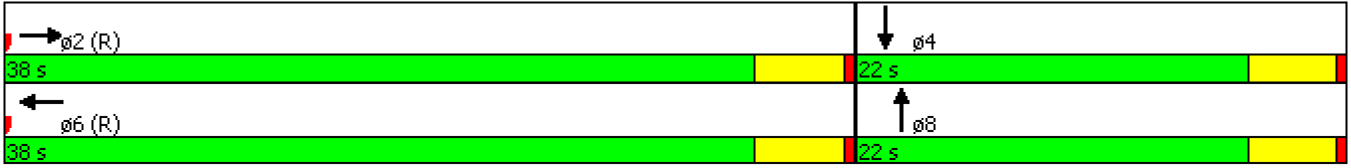
	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑			↑	
Volume (vph)	0	514	0	0	369	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	1863	0	0	1863	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		745			264			135			652	
Travel Time (s)		16.9			6.0			3.1			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	559	0	0	401	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		2			6			8			4	
Permitted Phases												
Total Split (s)		38.0			38.0			22.0			22.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Act Effct Green (s)		33.5			33.5							
Actuated g/C Ratio		0.56			0.56							
v/c Ratio		0.54			0.39							
Control Delay		10.8			9.6							
Queue Delay		0.0			1.3							
Total Delay		10.8			11.0							
LOS		B			B							
Approach Delay		10.8			11.0							
Approach LOS		B			B							
Queue Length 50th (ft)		114			69							
Queue Length 95th (ft)		189			142							
Internal Link Dist (ft)		665			184			55			572	
Turn Bay Length (ft)												
Base Capacity (vph)		1040			1040							
Starvation Cap Reductn		0			429							
Spillback Cap Reductn		0			0							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.54			0.66							

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 10.9 Intersection LOS: B

Intersection Capacity Utilization 30.8%   ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 20: Main Street


ø2 (R)
38 s
ø4
22 s
ø6 (R)
38 s
ø8
22 s

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰↑↱		↰	↑	↱
Volume (vph)	259	207	48	58	109	27	59	337	173	29	257	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		100
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.77	0.93		0.77	0.94			0.94		0.94		0.86
Frt		0.972			0.970			0.954				0.850
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1770	1689	0	1770	1704	0	0	3179	0	1770	1863	1583
Flt Permitted	0.663			0.569				0.861		0.317		
Satd. Flow (perm)	952	1689	0	820	1704	0	0	2731	0	557	1863	1368
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			29			124				218
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		264			483			1619			777	
Travel Time (s)		6.0			11.0			36.8			17.7	
Confl. Peds. (#/hr)	250		184	184		250	63		85	85		63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	282	277	0	63	147	0	0	618	0	32	279	218
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Total Split (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	24.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Act Effct Green (s)	32.0	32.0		32.0	32.0			20.0		20.0	20.0	20.0
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.33		0.33	0.33	0.33
v/c Ratio	0.56	0.30		0.14	0.16			0.62		0.17	0.45	0.36
Control Delay	7.3	3.1		8.2	6.3			14.4		17.1	18.6	4.5
Queue Delay	0.0	0.3		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	7.3	3.4		8.2	6.3			14.4		17.1	18.6	4.5
LOS	A	A		A	A			B		B	B	A
Approach Delay		5.3			6.8			14.4			12.7	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	15	3		10	19			49		8	78	0
Queue Length 95th (ft)	23	6		28	43			m88		27	137	39
Internal Link Dist (ft)		184			403			1539			697	
Turn Bay Length (ft)				150								100
Base Capacity (vph)	507	914		437	922			993		185	621	601
Starvation Cap Reductn	0	218		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	41			1		0	0	5
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.56	0.40		0.14	0.17			0.62		0.17	0.45	0.37

Intersection Summary	
Area Type:	Other
Cycle Length: 60	

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.62

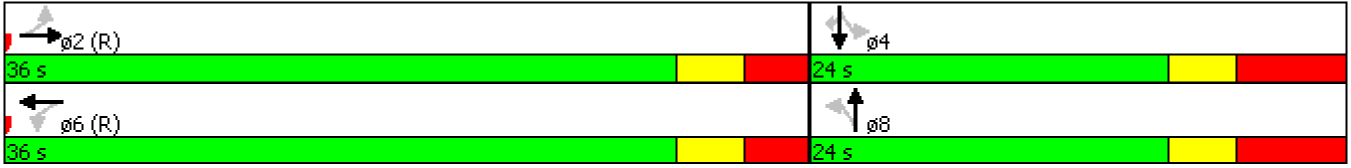
Intersection Signal Delay: 10.5 Intersection LOS: B

Intersection Capacity Utilization 72.8% ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 199: Vassar Street/Binney Street & Main Street



	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↱			↰↑↑↱		↰	↑↱		↰	↑↱	
Volume (vph)	61	661	53	24	717	199	87	152	25	179	209	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		0	180		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.96			0.93		0.90	0.98		0.91	0.96	
Frt		0.990			0.968			0.979			0.966	
Flt Protected		0.996			0.999		0.950			0.950		
Satd. Flow (prot)	0	3361	0	0	3183	0	1770	1793	0	1770	1734	0
Flt Permitted		0.721			0.920		0.581			0.637		
Satd. Flow (perm)	0	2423	0	0	2922	0	973	1793	0	1085	1734	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			68			9			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		198			197			578			1619	
Travel Time (s)		4.5			4.5			13.1			36.8	
Confl. Peds. (#/hr)	379		341	341		379	135		99	99		135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	842	0	0	1021	0	95	192	0	195	293	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Lost Time (s)		4.5			4.5		7.5	7.5		7.5	7.5	
Act Effct Green (s)		24.5			24.5		23.5	23.5		23.5	23.5	
Actuated g/C Ratio		0.41			0.41		0.39	0.39		0.39	0.39	
v/c Ratio		0.84			0.83		0.25	0.27		0.46	0.43	
Control Delay		14.0			22.3		14.6	13.1		18.0	15.5	
Queue Delay		0.1			0.0		0.0	0.0		0.0	0.0	
Total Delay		14.1			22.3		14.6	13.1		18.0	15.5	
LOS		B			C		B	B		B	B	
Approach Delay		14.1			22.3			13.6			16.5	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)		7			155		22	43		62	90	
Queue Length 95th (ft)		#159			#265		52	84		119	152	
Internal Link Dist (ft)		118			117			498			1539	
Turn Bay Length (ft)							115			180		
Base Capacity (vph)		998			1233		381	707		424	682	
Starvation Cap Reductn		7			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.85			0.83		0.25	0.27		0.46	0.43	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection

Control Type: Pretimed

Maximum v/c Ratio: 0.84

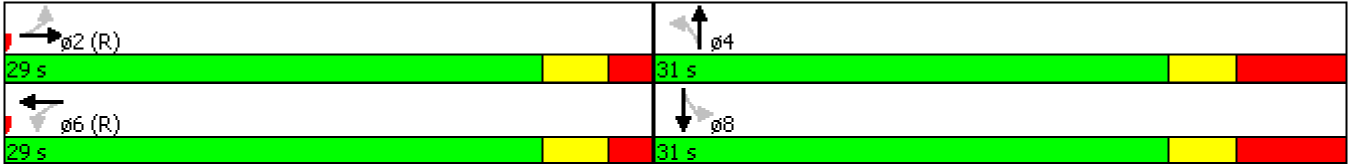
Intersection Signal Delay: 17.7 Intersection LOS: B

Intersection Capacity Utilization 94.4% ICU Level of Service F

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 219: Vassar Street & Mass Ave.



223: Albany Street & Mass Ave.

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱		↰	↑↱		↰	↑↱	
Volume (vph)	57	543	8	61	703	101	34	278	100	132	153	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.92		0.97	0.98		0.98	0.99	
Frt		0.998			0.982			0.960			0.969	
Flt Protected		0.995			0.997		0.950			0.950		
Satd. Flow (prot)	0	3489	0	0	3227	0	1770	1758	0	1770	1785	0
Flt Permitted		0.805			0.865		0.604			0.364		
Satd. Flow (perm)	0	2792	0	0	2764	0	1091	1758	0	662	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			33			35			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		539			197			404			675	
Travel Time (s)		12.3			4.5			9.2			15.3	
Confl. Peds. (#/hr)	475		300	300		475	37		47	47		37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	661	0	0	940	0	37	411	0	143	209	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Act Effct Green (s)		29.0			29.0		23.0	23.0		23.0	23.0	
Actuated g/C Ratio		0.48			0.48		0.38	0.38		0.38	0.38	
v/c Ratio		0.49			0.70		0.09	0.59		0.57	0.30	
Control Delay		12.0			5.8		12.6	17.7		25.5	13.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		12.0			5.8		12.6	17.7		25.5	13.9	
LOS		B			A		B	B		C	B	
Approach Delay		12.0			5.8			17.2			18.6	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)		78			0		8	104		39	49	
Queue Length 95th (ft)		118			0		25	184		#108	93	
Internal Link Dist (ft)		459			117			324			595	
Turn Bay Length (ft)										50		
Base Capacity (vph)		1351			1352		418	695		253	689	
Starvation Cap Reductn		0			14		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.49			0.70		0.09	0.59		0.57	0.30	

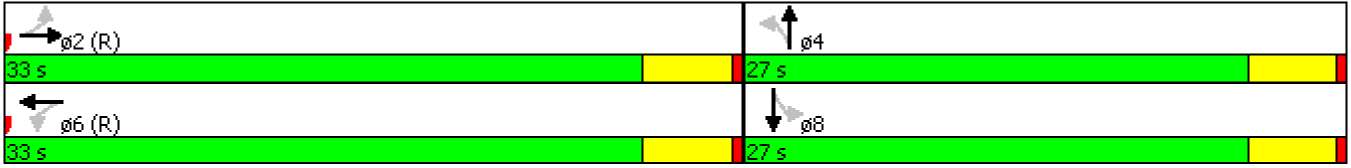
Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60
Offset: 59 (98%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 11.5   Intersection LOS: B
Intersection Capacity Utilization 85.0%   ICU Level of Service E
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 223: Albany Street & Mass Ave.



1: Railroad Crossing/Grand Junction Path & Mass Ave.

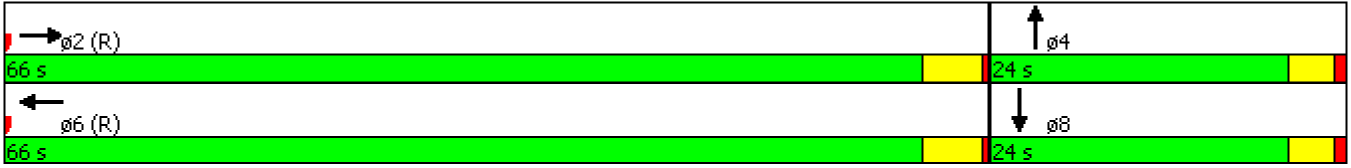
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Volume (vph)	0	628	0	0	825	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			199			363			303	
Travel Time (s)		4.5			4.5			8.3			6.9	
Confl. Bikes (#/hr)			96			229			100			100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	683	0	0	897	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		2			6			4			8	
Permitted Phases												
Total Split (s)		66.0			66.0			24.0			24.0	
Total Lost Time (s)		4.5			4.5			4.0			4.0	
Act Effct Green (s)		61.5			61.5							
Actuated g/C Ratio		0.68			0.68							
v/c Ratio		0.28			0.37							
Control Delay		0.9			0.6							
Queue Delay		0.3			0.8							
Total Delay		1.2			1.4							
LOS		A			A							
Approach Delay		1.2			1.4							
Approach LOS		A			A							
Queue Length 50th (ft)		3			5							
Queue Length 95th (ft)		11			m4							
Internal Link Dist (ft)		116			119			283			223	
Turn Bay Length (ft)												
Base Capacity (vph)		2418			2418							
Starvation Cap Reductn		1077			1120							
Spillback Cap Reductn		47			303							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.51			0.69							

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Pretimed

Maximum v/c Ratio: 0.37
Intersection Signal Delay: 1.3 Intersection LOS: A
Intersection Capacity Utilization 26.6% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Railroad Crossing/Grand Junction Path & Mass Ave.



199: Vassar Street/Binney Street & Main Street

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰↱		↰	↑	↱
Volume (vph)	30	163	50	71	117	49	56	225	114	30	314	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	150		0	0		0	0		100
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.73	0.95		0.88	0.89			0.91		0.87		0.90
Frt		0.965			0.956			0.957				0.850
Flt Protected	0.950			0.950				0.993		0.950		
Satd. Flow (prot)	1770	1715	0	1770	1589	0	0	3062	0	1770	1863	1583
Flt Permitted	0.631			0.581				0.818		0.449		
Satd. Flow (perm)	857	1715	0	948	1589	0	0	2510	0	724	1863	1420
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			34			81				120
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1009			483			1619			777	
Travel Time (s)		22.9			11.0			36.8			17.7	
Confl. Peds. (#/hr)	348		110	110		348	27		98	98		27
Confl. Bikes (#/hr)			11			24			31			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	231	0	77	180	0	0	430	0	33	341	302
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Total Split (s)	50.0	50.0		50.0	50.0		40.0	40.0		40.0	40.0	40.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Act Effct Green (s)	46.0	46.0		46.0	46.0			36.0		36.0	36.0	36.0
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.40		0.40	0.40	0.40
v/c Ratio	0.08	0.26		0.16	0.22			0.41		0.11	0.46	0.47
Control Delay	11.9	11.9		12.8	10.5			22.6		18.4	22.3	14.4
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	11.9	11.9		12.8	10.5			22.6		18.4	22.3	14.4
LOS	B	B		B	B			C		B	C	B
Approach Delay		11.9			11.2			22.6			18.6	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)	9	62		22	42			84		12	139	71
Queue Length 95th (ft)	25	107		47	80			m116		32	216	144
Internal Link Dist (ft)		929			403			1539			697	
Turn Bay Length (ft)	200			150								100
Base Capacity (vph)	438	888		484	828			1052		289	745	640
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.08	0.26		0.16	0.22			0.41		0.11	0.46	0.47

Intersection Summary	
Area Type:	Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Control Type: Pretimed

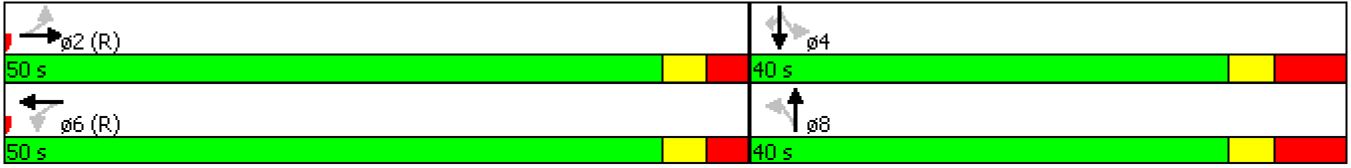
Maximum v/c Ratio: 0.47

Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 60.5%	ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 199: Vassar Street/Binney Street & Main Street



219: Vassar Street & Mass Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱		↰	↑↱			↰↑	↱
Volume (vph)	57	515	56	25	706	246	72	206	22	120	122	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		0	180		0
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.91		0.86	0.99			0.93	0.75
Frt		0.987			0.962			0.985				0.850
Flt Protected		0.995			0.999		0.950				0.976	
Satd. Flow (prot)	0	3297	0	0	3094	0	1770	1818	0	0	1818	1583
Flt Permitted		0.656			0.924		0.570				0.716	
Satd. Flow (perm)	0	2174	0	0	2851	0	917	1818	0	0	1242	1188
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		14			62			8				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		199			197			578			1619	
Travel Time (s)		4.5			4.5			13.1			36.8	
Confl. Peds. (#/hr)	170		219	219		170	119		117	117		119
Confl. Bikes (#/hr)			96			229			17			65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	683	0	0	1061	0	78	248	0	0	263	51
Turn Type	Perm	NA		Perm	NA		custom	NA		Perm	NA	custom
Protected Phases		2			6			3 4			7 8	
Permitted Phases	2			6			3			7 8		8
Total Split (s)	41.0	41.0		41.0	41.0		25.0					25.0
Total Lost Time (s)		4.5			4.5		7.5					8.0
Act Effct Green (s)		36.5			36.5		17.5	41.5			41.5	17.0
Actuated g/C Ratio		0.41			0.41		0.19	0.46			0.46	0.19
v/c Ratio		0.77			0.89		0.44	0.29			0.46	0.23
Control Delay		20.6			34.4		40.8	15.8			12.3	38.1
Queue Delay		0.7			0.0		0.0	0.0			0.0	0.0
Total Delay		21.3			34.4		40.8	15.8			12.3	38.1
LOS		C			C		D	B			B	D
Approach Delay		21.3			34.4			21.8			16.5	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		71			274		39	82			46	20
Queue Length 95th (ft)		83			#406		85	134			72	m51
Internal Link Dist (ft)		119			117			498			1539	
Turn Bay Length (ft)							115					
Base Capacity (vph)		890			1193		178	842			572	224
Starvation Cap Reductn		49			0		0	0			0	0
Spillback Cap Reductn		0			0		0	0			0	0
Storage Cap Reductn		0			0		0	0			0	0
Reduced v/c Ratio		0.81			0.89		0.44	0.29			0.46	0.23

Intersection Summary	
Area Type:	Other

Lane Group	ø4	ø7
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Total Split (s)	24.0	24.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection

Control Type: Pretimed

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 26.5 Intersection LOS: C

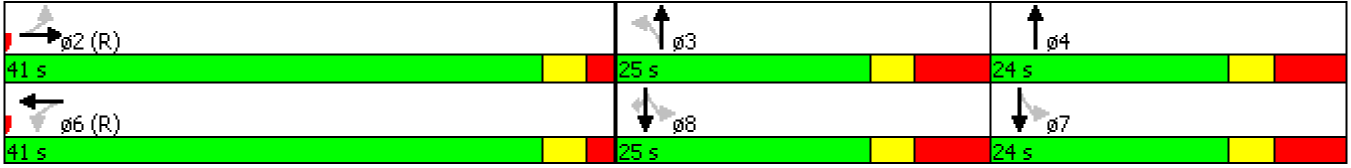
Intersection Capacity Utilization 94.5% ICU Level of Service F

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 219: Vassar Street & Mass Ave.



223: Albany Street & Mass Ave.

Weekday AM

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱			↰	↱	↰	↱	
Volume (vph)	49	460	27	132	555	138	28	254	71	97	161	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.91			1.00	0.89	0.96	0.97	
Frt		0.993			0.975				0.850		0.936	
Flt Protected		0.995			0.992			0.995		0.950		
Satd. Flow (prot)	0	3417	0	0	3173	0	0	1853	1583	1770	1696	0
Flt Permitted		0.738			0.674			0.952		0.443		
Satd. Flow (perm)	0	2523	0	0	2106	0	0	1769	1408	791	1696	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		7			31						60	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		539			196			404			675	
Travel Time (s)		12.3			4.5			9.2			15.3	
Confl. Peds. (#/hr)	121		147	147		121	73		59	59		73
Confl. Bikes (#/hr)			61			136			32			25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	582	0	0	896	0	0	306	77	105	304	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	custom	NA	
Protected Phases		2			6			3 4			7 8	
Permitted Phases	2			6			3 4		3	7		
Total Split (s)	40.0	40.0		40.0	40.0				26.0	26.0		
Total Lost Time (s)		4.0			4.0				4.5	4.0		
Act Effct Green (s)		36.0			36.0			46.0	21.5	22.0	46.0	
Actuated g/C Ratio		0.40			0.40			0.51	0.24	0.24	0.51	
v/c Ratio		0.57			1.04			0.34	0.23	0.54	0.34	
Control Delay		23.5			59.0			14.3	29.8	41.7	11.5	
Queue Delay		0.0			3.5			0.0	0.0	0.0	0.0	
Total Delay		23.5			62.5			14.3	29.8	41.7	11.5	
LOS		C			E			B	C	D	B	
Approach Delay		23.5			62.5			17.5			19.3	
Approach LOS		C			E			B			B	
Queue Length 50th (ft)		131			~93			98	35	52	76	
Queue Length 95th (ft)		185			#354			154	73	108	131	
Internal Link Dist (ft)		459			116			324			595	
Turn Bay Length (ft)										50		
Base Capacity (vph)		1013			861			904	336	193	896	
Starvation Cap Reductn		0			8			0	0	0	0	
Spillback Cap Reductn		0			0			0	0	0	0	
Storage Cap Reductn		0			0			0	0	0	0	
Reduced v/c Ratio		0.57			1.05			0.34	0.23	0.54	0.34	

Intersection Summary	
Area Type:	Other

Lane Group	ø4	ø8
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	4	8
Permitted Phases		
Total Split (s)	24.0	24.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 37.1 Intersection LOS: D

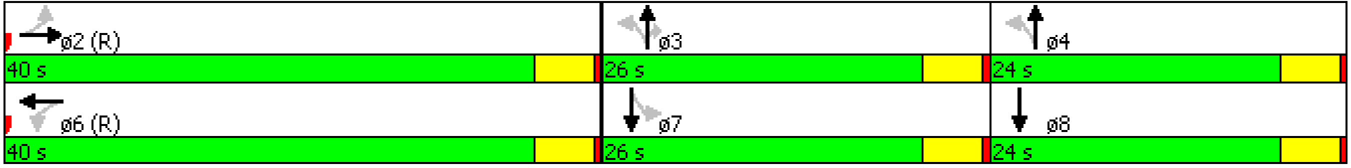
Intersection Capacity Utilization 86.2% ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 223: Albany Street & Mass Ave.



1: Railroad Crossing/Grand Junction Path & Mass Ave.

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑			↑	
Volume (vph)	0	775	0	0	865	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	0	3539	0	0	3539	0	0	1863	0	0	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		196			199			363			303	
Travel Time (s)		4.5			4.5			8.3			6.9	
Confl. Bikes (#/hr)			96			229			100			100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	842	0	0	940	0	0	0	0	0	0	0
Turn Type		NA			NA							
Protected Phases		2			6			4			8	
Permitted Phases												
Total Split (s)		66.0			66.0			24.0			24.0	
Total Lost Time (s)		4.5			4.5			4.0			4.0	
Act Effct Green (s)		61.5			61.5							
Actuated g/C Ratio		0.68			0.68							
v/c Ratio		0.35			0.39							
Control Delay		1.1			0.7							
Queue Delay		0.5			0.9							
Total Delay		1.6			1.6							
LOS		A			A							
Approach Delay		1.6			1.6							
Approach LOS		A			A							
Queue Length 50th (ft)		4			5							
Queue Length 95th (ft)		15			m6							
Internal Link Dist (ft)		116			119			283			223	
Turn Bay Length (ft)												
Base Capacity (vph)		2418			2418							
Starvation Cap Reductn		1041			1104							
Spillback Cap Reductn		258			242							
Storage Cap Reductn		0			0							
Reduced v/c Ratio		0.61			0.72							

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.39

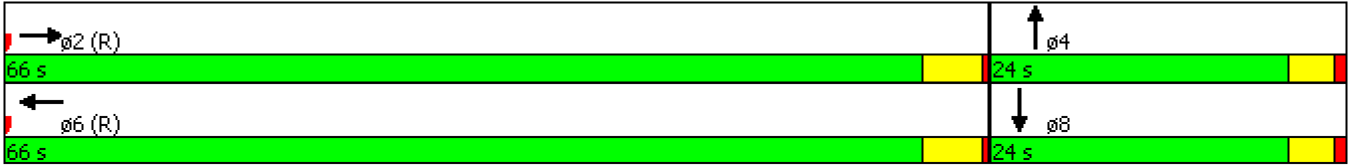
Intersection Signal Delay: 1.6 Intersection LOS: A

Intersection Capacity Utilization 27.7% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Railroad Crossing/Grand Junction Path & Mass Ave.



199: Vassar Street/Binney Street & Main Street

Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰↱		↰	↑	↱
Volume (vph)	259	207	48	58	109	27	59	337	173	29	257	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	150		0	0		0	0		100
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.74	0.94		0.82	0.93			0.91		0.92		0.80
Frt		0.972			0.970			0.954				0.850
Flt Protected	0.950			0.950				0.995		0.950		
Satd. Flow (prot)	1770	1705	0	1770	1688	0	0	3077	0	1770	1863	1583
Flt Permitted	0.663			0.538				0.875		0.326		
Satd. Flow (perm)	908	1705	0	822	1688	0	0	2679	0	561	1863	1265
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			20			91				212
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1009			483			1619			777	
Travel Time (s)		22.9			11.0			36.8			17.7	
Confl. Peds. (#/hr)	250		184	184		250	63		85	85		63
Confl. Bikes (#/hr)			11			24			31			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	282	277	0	63	147	0	0	618	0	32	279	218
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Total Split (s)	50.0	50.0		50.0	50.0		40.0	40.0		40.0	40.0	40.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0		4.0	4.0	4.0
Act Effct Green (s)	46.0	46.0		46.0	46.0			36.0		36.0	36.0	36.0
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.40		0.40	0.40	0.40
v/c Ratio	0.61	0.31		0.15	0.17			0.55		0.14	0.37	0.34
Control Delay	22.6	13.1		12.9	10.7			24.2		19.4	20.9	4.6
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	22.6	13.1		12.9	10.7			24.2		19.4	20.9	4.6
LOS	C	B		B	B			C		B	C	A
Approach Delay		17.9			11.4			24.2			14.1	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)	108	80		18	36			125		11	110	2
Queue Length 95th (ft)	198	133		41	69			m168		32	174	45
Internal Link Dist (ft)		929			403			1539			697	
Turn Bay Length (ft)	200			150								100
Base Capacity (vph)	464	880		420	872			1126		224	745	633
Starvation Cap Reductn	0	0		0	0			0		0	0	0
Spillback Cap Reductn	0	0		0	0			0		0	0	0
Storage Cap Reductn	0	0		0	0			0		0	0	0
Reduced v/c Ratio	0.61	0.31		0.15	0.17			0.55		0.14	0.37	0.34

Intersection Summary	
Area Type:	Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.61

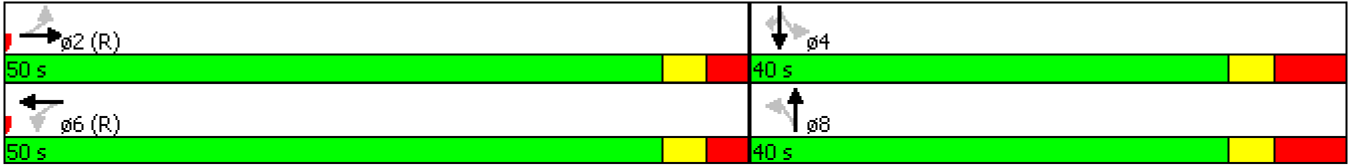
Intersection Signal Delay: 18.2 Intersection LOS: B

Intersection Capacity Utilization 72.8% ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 199: Vassar Street/Binney Street & Main Street



219: Vassar Street & Mass Ave.

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱		↰	↑↱			↰↑	↱
Volume (vph)	61	661	53	24	717	199	87	152	25	179	209	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	115		0	180		0
Storage Lanes	0		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.96			0.91		0.90	0.99			0.94	0.73
Frt		0.990			0.968			0.979				0.850
Flt Protected		0.996			0.999		0.950				0.977	
Satd. Flow (prot)	0	3337	0	0	3118	0	1770	1802	0	0	1820	1583
Flt Permitted		0.669			0.916		0.299				0.760	
Satd. Flow (perm)	0	2241	0	0	2851	0	503	1802	0	0	1332	1154
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		10			45			9				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		199			197			578			1619	
Travel Time (s)		4.5			4.5			13.1			36.8	
Confl. Peds. (#/hr)	379		341	341		379	135		99	99		135
Confl. Bikes (#/hr)			96			229			17			65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	842	0	0	1021	0	95	192	0	0	422	66
Turn Type	Perm	NA		Perm	NA		custom	NA		Perm	NA	custom
Protected Phases		2			6			3 4			7 8	
Permitted Phases	2			6			3			7 8		8
Total Split (s)	41.0	41.0		41.0	41.0		25.0					25.0
Total Lost Time (s)		4.5			4.5		7.5					8.0
Act Effct Green (s)		36.5			36.5		17.5	41.5			41.5	17.0
Actuated g/C Ratio		0.41			0.41		0.19	0.46			0.46	0.19
v/c Ratio		0.92			0.86		0.98	0.23			0.69	0.30
Control Delay		33.8			32.6		126.8	14.8			20.1	35.3
Queue Delay		0.2			0.0		0.0	0.0			0.0	0.0
Total Delay		34.0			32.6		126.8	14.8			20.1	35.3
LOS		C			C		F	B			C	D
Approach Delay		34.0			32.6			51.9			22.1	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)		96			262		54	60			97	24
Queue Length 95th (ft)		#299			#385		#152	103			318	62
Internal Link Dist (ft)		119			117			498			1539	
Turn Bay Length (ft)							115					
Base Capacity (vph)		914			1182		97	835			614	217
Starvation Cap Reductn		3			0		0	0			0	0
Spillback Cap Reductn		0			0		0	0			0	0
Storage Cap Reductn		0			0		0	0			0	0
Reduced v/c Ratio		0.92			0.86		0.98	0.23			0.69	0.30

Intersection Summary	
Area Type:	Other

Lane Group	ø4	ø7
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	4	7
Permitted Phases		
Total Split (s)	24.0	24.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection

Control Type: Pretimed

Maximum v/c Ratio: 0.98

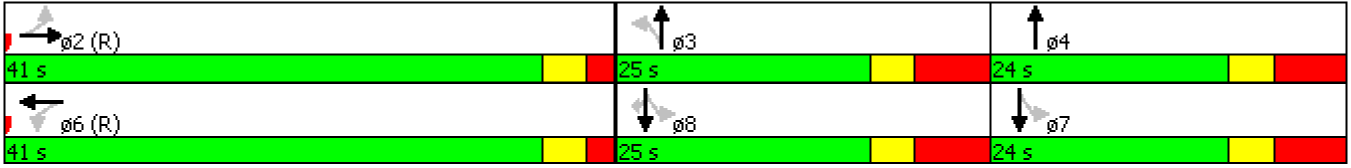
Intersection Signal Delay: 33.2 Intersection LOS: C

Intersection Capacity Utilization 102.4% ICU Level of Service G

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 219: Vassar Street & Mass Ave.



223: Albany Street & Mass Ave.

Weekday PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↱			↰↑↑↱			↰↑	↱	↰	↑↱	
Volume (vph)	57	543	8	61	703	101	34	278	100	132	153	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.91			1.00	0.90	0.97	0.99	
Frt		0.998			0.982				0.850		0.969	
Flt Protected		0.995			0.997			0.995		0.950		
Satd. Flow (prot)	0	3486	0	0	3175	0	0	1853	1583	1770	1789	0
Flt Permitted		0.696			0.817			0.953		0.400		
Satd. Flow (perm)	0	2438	0	0	2572	0	0	1772	1430	722	1789	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		2			19						3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		539			196			404			675	
Travel Time (s)		12.3			4.5			9.2			15.3	
Confl. Peds. (#/hr)	475		300	300		475	37		47	47		37
Confl. Bikes (#/hr)			61			136			32			25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	661	0	0	940	0	0	339	109	143	209	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	custom	custom	NA	
Protected Phases		2			6			3 4			7 8	
Permitted Phases	2			6			3 4		3	7		
Total Split (s)	40.0	40.0		40.0	40.0				26.0	26.0		
Total Lost Time (s)		4.0			4.0				4.5	4.0		
Act Effct Green (s)		36.0			36.0			46.0	21.5	22.0	46.0	
Actuated g/C Ratio		0.40			0.40			0.51	0.24	0.24	0.51	
v/c Ratio		0.68			0.90			0.37	0.32	0.81	0.23	
Control Delay		26.4			28.1			14.8	31.4	67.3	12.8	
Queue Delay		0.0			0.2			0.0	0.0	0.0	0.0	
Total Delay		26.4			28.3			14.8	31.4	67.3	12.8	
LOS		C			C			B	C	E	B	
Approach Delay		26.4			28.3			18.9			34.9	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)		158			86			111	51	77	61	
Queue Length 95th (ft)		222			#318			173	99	#181	103	
Internal Link Dist (ft)		459			116			324			595	
Turn Bay Length (ft)										50		
Base Capacity (vph)		976			1040			905	341	176	915	
Starvation Cap Reductn		0			5			0	0	0	0	
Spillback Cap Reductn		0			0			0	0	0	0	
Storage Cap Reductn		0			0			0	0	0	0	
Reduced v/c Ratio		0.68			0.91			0.37	0.32	0.81	0.23	

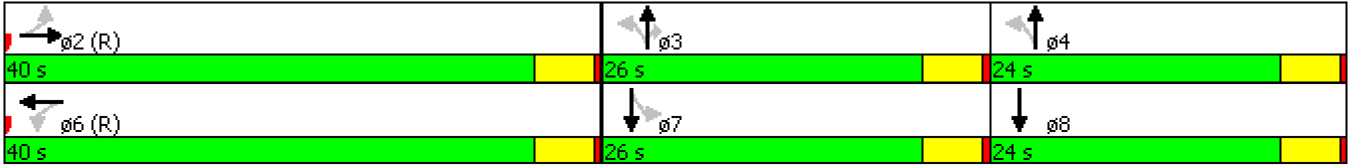
Intersection Summary	
Area Type:	Other

Lane Group	ø4	ø8
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	4	8
Permitted Phases		
Total Split (s)	24.0	24.0
Total Lost Time (s)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 27.0 Intersection LOS: C
Intersection Capacity Utilization 83.6% ICU Level of Service E
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 223: Albany Street & Mass Ave.



Capacity Analysis Summary
Grand Junction
Cambridge, MA

			Weekday Morning Peak Hour											
			2014 Existing			**2014 Build Alt 1**			**2014 Build Alt 2**			**2014 Build Alt 3**		
Intersection	**Movement**		**LOS[1]**	**Delay[2]**	**V/C[3]**	**LOS**	**Delay**	**V/C**	**LOS**	**Delay**	**V/C**	**LOS**	**Delay**	**V/C**
Main Street at	EB	L	C	21.0	0.08	B	16.9	0.08	A	8.3	0.07	B	11.9	0.08
Vassar Street/Galileo Galilei Way		TR	C	22.0	0.29	B	19.4	0.27	A	7.8	0.32	B	11.9	0.26
	WB	L	B	15.1	0.19	B	13.2	0.18	B	13.6	0.20	B	12.8	0.16
		TR	B	12.2	0.23	B	10.5	0.22	B	12.1	0.29	B	10.5	0.22
	NB	LTR	B	12.6	0.37	B	11.1	0.41	A	7.6	0.32	C	22.6	0.41
	SB	L	B	14.4	0.10	B	18.4	0.11	A	9.7	0.09	B	18.4	0.11
		T	B	15.8	0.42	C	22.3	0.46	B	12.1	0.39	C	22.3	0.46
		R	B	10.6	0.45	B	14.4	0.47	B	13.3	0.45	B	14.4	0.47
	Overall		*B*	*14.5*	*0.45*	*B*	*15.5*	*0.47*	*B*	*10.5*	*0.45*	*B*	*17.4*	*0.47*
Main Street at	EB	T	n/a	n/a	n/a	A	6.90	0.26	A	7.6	0.25	n/a	n/a	n/a
Grand Junction Path	EB	T	n/a	n/a	n/a	A	7.70	0.47	C	20.4	0.47	n/a	n/a	n/a
	Overall		*n/a*	*n/a*	*n/a*	*A*	*7.40*	*0.47*	*B*	*15.9*	*0.47*	*n/a*	*n/a*	*n/a*
Massachusetts Avenue at	EB	LTR	E	79.8	0.74	F	95.8	0.78	A	9.3	0.70	C	21.3	0.77
Vassar Street	WB	LTR	C	29.7	0.85	F	93.3	0.87	C	22.4	0.84	C	34.4	0.89
	NB	L	D	51.7	0.51	F	108.8	0.46	B	13.5	0.19	D	40.8	0.44
		TR	C	31.6	0.51	C	32.0	0.51	B	14.0	0.35	B	15.8	0.29
	SB	L	E	74.0	0.68	E	65.6	0.66	B	17.5	0.33	n/a	n/a	n/a
		TR	B	18.6	0.33	B	16.5	0.34	B	13.8	0.27	n/a	n/a	n/a
		LT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	B	12.3	0.46
		R	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	D	38.1	0.23
	Overall		*D*	*46.5*	*0.85*	*F*	*80.7*	*0.87*	*B*	*16.5*	*0.84*	*C*	*26.5*	*0.89*
Massachusetts Avenue at	EB	T	A	0.1	0.19	E	69.0	0.50	A	5.6	0.34	A	1.2	0.28
Railroad/Grand Junction Path	WB	T	A	0.2	0.25	C	26.6	0.65	A	4.5	0.44	A	1.4	0.37
	Overall		*A*	*0.2*	*0.25*	*D*	*44.9*	*0.65*	*A*	*5.0*	*0.44*	*A*	*1.3*	*0.37*
Massachusetts Avenue at	EB	LTR	B	16.1	0.44	B	14.4	0.40	B	11.0	0.42	C	23.5	0.57
Albany Street	WB	LTR	E	76.3	0.81	E	68.2	0.74	A	8.2	0.75	E	62.5	1.04
	NB	L	B	16.5	0.09	B	18.6	0.10	B	12.8	0.09	n/a	n/a	n/a
		TR	C	20.2	0.47	C	23.0	0.51	B	16.2	0.51	n/a	n/a	n/a
		LT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	B	14.3	0.34
		R	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	C	29.8	0.23
	SB	L	C	20.8	0.33	B	15.4	0.38	B	17.6	0.35	D	41.7	0.54
		TR	B	16.0	0.42	B	10.5	0.45	B	12.8	0.45	B	11.5	0.34
	Overall		*D*	*40.7*	*0.81*	*D*	*36.5*	*0.74*	*B*	*11.3*	*0.75*	*D*	*37.1*	*1.04*

1 Level-of-Service

2 Average vehicle delay in seconds

3 Volume to capacity ratio

Queue Summary
Grand Junction
Cambridge, MA

			Weekday Morning Peak Hour							
			2014 Existing		**2014 Build Alt 1**		**2014 Build Alt 2**		**2014 Build Alt 3**	
Intersection	**Movement**		**50th Queue[1]**	**95th Queue[2]**	**50th Queue**	**95th Queue**	**50th Queue**	**95th Queue**	**50th Queue**	**95th Queue**
Main Street at	EB	L	13	17	14	34	4	11	9	25
Vassar Street/Galileo Galilei Way		TR	92	113	94	136	17	32	62	107
	WB	L	24	52	22	48	18	43	22	47
		TR	47	88	42	80	34	74	42	80
	NB	LTR	70	93	54	85	27	51	84	116
	SB	L	8	16	12	32	6	19	12	32
		T	80	137	139	216	75	130	139	216
		R	33	90	71	144	61	120	71	144
Main Street at	EB	T	n/a	n/a	58	116	44	143	n/a	n/a
Grand Junction Path	EB	T	n/a	n/a	62	184	78	258	n/a	n/a
Massachusetts Avenue at	EB	LTR	163	235	166	206	12	18	71	83
Vassar Street	WB	LTR	262	357	301	382	159	273	274	406
	NB	L	43	88	42	87	18	43	39	85
		TR	117	191	118	193	58	107	82	134
	SB	L	79	158	79	152	39	79	n/a	n/a
		TR	34	111	38	69	47	92	n/a	n/a
		LT	n/a	n/a	n/a	n/a	n/a	n/a	46	72
		R	n/a	n/a	n/a	n/a	n/a	n/a	20	51
Massachusetts Avenue at	EB	T	0	0	124	164	38	32	3	5
Railroad Corridor	WB	T	0	0	186	230	52	38	11	4
Massachusetts Avenue at	EB	LTR	106	150	97	137	65	100	131	185
Albany Street	WB	LTR	208	298	143	205	17	53	93	354
	NB	L	10	27	11	29	7	22	n/a	n/a
		TR	133	210	142	224	86	155	n/a	n/a
		LT	n/a	n/a	n/a	n/a	n/a	n/a	98	154
		R	n/a	n/a	n/a	n/a	n/a	n/a	35	73
	SB	L	29	54	20	32	26	63	52	108
		TR	67	126	39	67	58	117	76	131

1 50th Percentile Queue Length, in feet
2 95th Percentile Queue Length, in feet
n/a Not Applicable

Capacity Analysis Summary
Grand Junction
Cambridge, MA

			Weekday Afternoon Peak Hour											
			2014 Existing			**2014 Build Alt 1**			**2014 Build Alt 2**			**2014 Build Alt 3**		
Intersection	**Movement**		**LOS**[1]	**Delay**[2]	**V/C**[3]	**LOS**	**Delay**	**V/C**	**LOS**	**Delay**	**V/C**	**LOS**	**Delay**	**V/C**
Main Street at	EB	L	C	22.6	0.61	C	28.2	0.61	A	7.3	0.56	C	22.6	0.61
Vassar Street/Galileo Galilei Way		TR	B	13.3	0.33	B	17.0	0.33	A	3.4	0.30	B	13.1	0.31
	WB	L	B	13.5	0.18	B	10.7	0.18	A	8.2	0.14	B	12.9	0.15
		TR	B	10.7	0.17	A	8.0	0.17	A	6.3	0.16	B	10.7	0.17
	NB	LTR	B	13.9	0.55	B	14.8	0.55	B	14.4	0.62	C	24.2	0.55
	SB	L	B	19.4	0.14	B	19.4	0.14	B	17.1	0.17	B	19.4	0.14
		T	C	20.9	0.37	C	20.9	0.37	B	18.6	0.45	C	20.9	0.37
		R	A	4.6	0.34	A	4.5	0.34	A	4.5	0.36	A	4.6	0.34
	Overall		*B*	*14.9*	*0.61*	*B*	*16.2*	*0.61*	*B*	*10.5*	*0.62*	*B*	*18.2*	*0.61*
Main Street at	EB	T	n/a	n/a	n/a	B	13.1	0.54	B	10.8	0.54	n/a	n/a	n/a
Grand Junction Path	EB	T	n/a	n/a	n/a	A	8.3	0.39	B	11.0	0.39	n/a	n/a	n/a
	Overall		*n/a*	*n/a*	*n/a*	*B*	*11.1*	*0.54*	*B*	*10.9*	*0.54*	*n/a*	*n/a*	*n/a*
Massachusetts Avenue at	EB	LTR	F	96.8	1.03	F	101.5	0.94	B	14.1	0.84	C	34.0	0.92
Vassar Street	WB	LTR	D	42.1	0.93	F	92.9	0.85	C	22.3	0.83	C	32.6	0.86
	NB	L	D	50.8	0.55	F	133.7	0.55	B	14.6	0.25	F	126.8	0.98
		TR	C	29.2	0.40	C	29.3	0.41	B	13.1	0.27	B	14.8	0.23
	SB	L	E	72.5	0.82	F	99.5	0.95	B	18.0	0.46	n/a	n/a	n/a
		TR	C	20.3	0.51	C	22.7	0.54	B	15.5	0.43	n/a	n/a	n/a
		LT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	C	20.1	0.69
		R	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	D	35.3	0.30
	Overall		*E*	*58.8*	*1.03*	*F*	*85.2*	*0.95*	*B*	*17.7*	*0.84*	*C*	*33.2*	*0.98*
Massachusetts Avenue at	EB	T	A	0.2	0.24	E	68.9	0.61	A	6.8	0.45	A	1.6	0.35
Railroad/Grand Junction Path	WB	T	A	0.2	0.27	C	31.6	0.68	A	5.0	0.51	A	1.6	0.39
	Overall		*A*	*0.2*	*0.27*	*D*	*49.2*	*0.68*	*A*	*5.8*	*0.51*	*A*	*1.6*	*0.39*
Massachusetts Avenue at	EB	LTR	B	15.0	0.47	A	9.4	0.47	B	12.0	0.49	C	26.4	0.68
Albany Street	WB	LTR	E	69.4	0.67	E	62.4	0.66	A	5.8	0.70	C	28.3	0.90
	NB	L	B	18.4	0.09	B	18.4	0.09	B	12.6	0.09	n/a	n/a	n/a
		TR	C	24.8	0.60	C	24.8	0.59	B	17.7	0.59	n/a	n/a	n/a
		LT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	B	14.8	0.37
		R	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	C	31.4	0.32
	SB	L	C	34.7	0.60	C	29.3	0.60	C	25.5	0.57	E	67.3	0.81
		TR	B	19.3	0.30	B	14.7	0.30	B	13.9	0.30	B	12.8	0.23
	Overall		*D*	*39.6*	*0.67*	*C*	*34.6*	*0.66*	*B*	*11.5*	*0.70*	*C*	*27.0*	*0.90*

1 Level-of-Service
2 Average vehicle delay in seconds
3 Volume to capacity ratio

Queue Summary
Grand Junction
Cambridge, MA

			Weekday Afternoon Peak Hour							
			2014 Existing		**2014 Build Alt 1**		**2014 Build Alt 2**		**2014 Build Alt 3**	
Intersection	**Movement**		**50th Queue[1]**	**95th Queue[2]**	**50th Queue**	**95th Queue**	**50th Queue**	**95th Queue**	**50th Queue**	**95th Queue**
Main Street at	EB	L	108	198	119	129	15	23	108	198
Vassar Street/Galileo Galilei Way		TR	81	134	114	124	3	6	80	133
	WB	L	18	43	24	42	10	28	18	41
		TR	36	69	48	74	19	43	36	69
	NB	LTR	85	110	88	127	49	m88	125	168
	SB	L	11	32	11	32	8	27	11	32
		T	110	174	110	174	78	137	110	174
		R	2	45	2	45	0	39	2	45
Main Street at	EB	T	n/a	n/a	179	100	59	76	n/a	n/a
Grand Junction Path	WB	T	n/a	n/a	264	121	40	50	n/a	n/a
Massachusetts Avenue at	EB	LTR	271	391	205	372	7	159	96	299
Vassar Street	WB	LTR	277	415	291	365	155	265	262	385
	NB	L	52	101	52	101	22	52	54	152
		TR	86	148	86	148	43	84	60	103
	SB	L	117	227	120	253	62	119	n/a	n/a
		TR	81	126	82	124	90	152	n/a	n/a
		LT	n/a	n/a	n/a	n/a	n/a	n/a	97	318
		R	n/a	n/a	n/a	n/a	n/a	n/a	24	62
Massachusetts Avenue at	EB	T	0	0	174	193	59	40	4	5
Railroad Corridor	WB	T	0	0	222	245	76	50	15	6
Massachusetts Avenue at	EB	LTR	118	164	147	199	78	118	158	222
Albany Street	WB	LTR	190	258	133	196	0	0	86	318
	NB	L	13	34	13	34	8	25	n/a	n/a
		TR	171	268	171	267	104	184	n/a	n/a
		LT	n/a	n/a	n/a	n/a	n/a	n/a	111	173
		R	n/a	n/a	n/a	n/a	n/a	n/a	51	99
	SB	L	64	136	49	141	39	108	77	181
		TR	75	129	53	84	49	93	61	103

1 50th Percentile Queue Length, in feet
2 95th Percentile Queue Length, in feet
n/a Not Applicable

Appendix C

Goals and Evaluation Criteria

KLEINFELDER
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M E M O R A N D U M

TO: File 20140204 – MIT Grand Junction Corridor

FROM: Don Kindsvatter

DATE: October 1, 2014

SUBJECT: Evaluation of Options

Based on the project's goals and objectives, evaluation criteria were developed to rank the options. Two options (A and B) were prepared for the corridor west of Massachusetts Avenue (Mass Ave) and six options (C through H) were prepared for the corridor east of Mass Ave.

While numerous criteria were developed many turned out not to be differentiators between options. For example, the crossings at Mass Ave and Main Street would be handled in the same manner for all options. Similarly, impacts on current rail use along the corridor would not differ from option to option.

The key differentiators were the ability of particular options to minimize conflicts between the multi-use path and the adjacent service drive; both in terms of space available and frequency of overlap.

Option A is the preferred option for the corridor west of Mass Ave and Option C is preferred east of Mass Ave. This combination provides a continuous path on the north side of the tracks with special conditions at Pacific Street and Main Street. At Pacific Street there is a pinch point between a retaining wall and gas storage tank enclosure that will require vehicles to overlap onto the mutli-use path. At Main Street the path splits into eastbound and westbound lanes to accommodate the openings under the Brain and Cog building. While this arrangement did not score well on "providing an unobstructed and intuitive path," the separation provided between service drives and the multi-use path more than compensated for that score.

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Goals & Objectives Evaluation Criteria & Measurements	West of Mass Ave Option A Path with 10-foot offset from CL	Option B Path with 16-foot offset from CL	East of Mass Ave Option C Two-way path on north side	Option D Two-way path on south side	Option E Two-way path on south side--with tanks moved	Option F One-way path on both sides	Option G Two-way path shifting from north to south side	Option H Two-way path north side with split path at crossing
1. Provide a multi-use path to establish a link in a regional network, connecting between existing and future paths along or across the Charles River to the west, and East Cambridge and Somerville to the east								
a. Evaluate the feasibility of the Grand Junction Corridor to provide that link	2	2	1	1	2	1	2	1
2 - Option provides an unobstructed and intutitive path 1 - Option provides a somewhat unobstructed and intutitive path 0 - Option DOES NOT provide an unobstructed and intutitive path								
b. Evaluate the existing Vassar Street cycle track for capacity and improvements	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
c. Evaluate a combination of both facilities considering regional and local travel needs	1	1	1	2	2	1	1	1
2 - Option provides opportunities for new connects between GJ and Vassar St cycle track 1 - Option maintians existing connections between GJ and Vassar St cycle track 0 - Option reduces connections between GJ and Vassar St cycle track								
2. Integrate path with campus open space, circulation, and sustainability plans to serve existing and future campus buildings								
a. Create a pleasant environment providing a comfort level that attracts users	1	1	1	1	1	1	1	1
2 - Option provides an attractive environment for bicyclists AND pedestrians 1 - Option provides an attractive environment for bicyclists BUT NOT pedestrians 0 - Option DOES NOT provides an attractive environment for bicyclists and pedestrians								
b. Minimize maintenance requirements for planting and other materials	2	2	2	2	2	2	2	2
2 - Path provides space for planting and other enhancements only at cross-corridor connections 1 - Path provides space for planting and other enhancements at many locations 0 - Path provides space for continuous planting and other enhancements								
c. Evaluate opportunities for open space nodes at corridor crossings	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2 - Option provides numerous opportunities for additional nodes and connections 1 - Option provides numerous opportunities for additional nodes and connections 0 - Option provides no opportunities for additional nodes and connections								
3. Accommodate transitions to a continuation of the path beyond Main Street to the east and Memorial Drive to the west for GJC and Vassar Street								
a. Eastward along Galileo Galilei Way and Binney Street toward Lechmere (from Vassar)	N/A	N/A	NA/	N/A	N/A	N/A	N/A	N/A
2 - Option provides intuitive and safe connection across Main Street 1 - Option provide adequate connection across Main Street 0 - Option provides poor connection across Main Street								
b. Eastward along the Grand Junction Corridor toward Somerville	2	2	2	2	2	2	2	2
2 - Option provides intuitive and safe connection across Main Street 1 - Option provides adequate connection across Main Street 0 - Option provides poor connection across Main Street								
c. Westward along the Paul Dudley White paths at the Charles River	N/A	N/A	NA/	N/A	N/A	N/A	N/A	N/A
2 - Option provides intuitive and safe connection across Memorial Drive 1 - Option provides adequate connection across Memorial Drive 0 - Option provides poor connection across Memorial Drive								
d. Westward to and from the BU Bridge	1	1	1	1	1	1	1	1
2 - Option provides intuitive and safe connection to the BU Bridge 1 - Option provides adequate connection across to the BU Bridge 0 - Option provides poor connection across to the BU Bridge								
e. Westward to the rail bridge connecting to Allston. (*See Note 1*)	1	1	1	1	1	1	1	1
2 - Option provides intuitive and safe connection to the rail bridge 1 - Option provides adequate connection to the rail bridge 0 - Option provides poor connection to the rail bridge								

4. Provide a safe and secure environment for path users and adjacent building services								
a. Maintain emergency access for the full length of the corridor – police, fire, ambulance, etc.	2	2	2	2	2	2	2	2
2 - Continuous emergency access maintained for full length of corridor 1 - Discontinuous emergency access maintained for full length of corridor 0 - Emergency access NOT maintained for full length of corridor								
b. Minimize conflict locations (service vehicles turning or parking) between path and loading docks or tanks	1	0	2	0	1	1	1	2
2 - Less than [3] points of conflict with a total length of less than [100] feet 1 - [3] to [5] points of conflict with a total length of less than [200] feet 0 - More than [5] points of conflict with a total length greater than [200] feet								
c. Maintain sufficient visibility and minimize hidden areas	1	0	1	2	2	2	2	2
2 - Sides of path are visually open without hidden areas 1 - Sides of path contain a few hidden or hard-to-see areas 0 - Sides of path contain multiple hidden areas								
d. Design for the least confident users	2	2	2	2	2	2	2	2
2 - Entire length of path is off-street (except for street crossings) 1 - More than 90% of path is off-street 0 - Less than 90% of path is off-street								
e. Provide adequate protection/separation from rail traffic	2	2	2	2	2	2	2	2
2 - Entire length of path is separated from rail with fence (except street crossings) 1 - More than 90% of path is separated from rail with fence (except street crossings) 0 - Less than 90% of path is separated from rail with fence (except street crossings)								
f. Does not encourage wrong-way ridding	2	2	2	2	2	1	2	1
2 - No one-way paths 1 - One-way paths do not connect to desired destinations 0 - One-way paths connect to desired destinations								
5. Minimize conflicts between Grand Junction path users and MIT's services and campus development								
a. Maintain loading and delivery operations (materials management) for campus buildings *(See 4b)*	1	0	2	1	1	2	1	1
2 - Loading and delivery is separated from multiuse path for segment length 1 - Loading and delivery vehicles overlap multiuse path while in motion 0 - Loading and delivery vehicles need to stop on multi-use path								
b. Minimize vehicle conflicts along the corridor	1	0	2	0	1	1	1	1
2 - Service vehicles and bicycles never share path 1 - Service vehicles and bicycles share same path less than four (4) times per day 0 - Service vehicles and bicycles share path four (4) or more times per day								
c. Maintain ongoing maintenance activities for buildings (window washing, etc.)	1	0	2	0	1	1	1	1
2 - A 10-foot service drive between building and the multi-use path is maintained for segment length 1 - Maintenance vehicles overlap multiuse path while in motion 0 - Maintenance vehicles need to stop on the service drive and force other vehicles onto the multi-use path								
d. Maintain access to utilities and optimize utility locations	2	2	2	2	2	2	2	2
2 - An alternate off-street route for bicyclists is available during utility construction 1 - An mostly off-street alternate route for bicyclists is available 0 - No off-street alternate route for bicyclists is available								
e. Protect future development potential (including air-rights)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2 - Multi-use path does not preclude future campus development 1 - Multi-use path has minimal impact on future campus development 0 - Multi-use path has significant impact on future campus development								
f. Accommodate parking facilities and spaces	2	2	2	1	0	1	0	1
2 - All existing parking in corridor is maintained 1 - Less than 15 parking spaces are displaced or impacted 0 - 15 or more parking spaces are displaced or impacted								

6. Preserve existing rail and future public transportation uses of the corridor								
a. Maintain current freight operations and current commuter rail vehicle transfers	2	2	2	2	2	2	2	2
2 - Multi-use path does not impact on current operations 1 - Multi-use path has minimal impact on current operations 0 - Multi-use path has significant impact on current operations								
b. Do not preclude the Urban Ring Locally Preferred Alternative	0	0	0	0	0	0	0	0
2 - Multi-use path does not use rail ROW west of Erie Street 1 - Multi-use path uses portion of rail ROW west of Erie Street 0 - Multi-use path does uses all of rail ROW west of Erie Street								
c. Do not preclude future single-track DMU or similar service[1]	2	2	2	2	2	2	2	2
2 - Multi-use path does not impact future service 1 - Multi-use path has minimal impact on future service 0 - Multi-use path has significant impact on future service								
d. Do not preclude future double-track DMU or similar service[2]	N/A	N/A	2	0	0	1	0	1
2 - Multi-use path does not impact future service 1 - Multi-use path has minimal impact on future service 0 - Multi-use path has significant impact on future service								
e. Maintain the ability for rail use and storage for the circus or other special trains	2	2	2	2	2	2	2	2
2 - Multi-use path maintains siding track west of Mass Ave 1 - Multi-use path has some impact on siding track west of Mass Ave 0 - Multi-use path requires removal of siding track west of Mass Ave								
7. Provide street crossings at Massachusetts Avenue and Main Street that optimize safety and operations for all modes								
a. Consider roadway corridor coordination beyond the study area in assessing intersections	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
b. Consider mode balance at different times of day and different days of the week	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
c. Consider mode behavior and explore options that may not require a physical design change	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix D

Rails-with-Trails

Precedents

Toole Design Group

8484 Georgia Avenue
Suite 800
Silver Spring, MD 20910
301.927.1900
301.927.2800 fax
www.tooledesign.com

MEMORANDUM

Date: September 19, 2014

To: Tom Doolittle, ASLA, PLA, LEED AP BD+C, Kleinfelder
Don Kindsvatter, AIA, AICP, LEED AP, Kleinfelder

From: Jeffrey Ciabotti, Toole Design Group
Michelle Danila, P.E., PTOE, Toole Design Group

Project: Grand Junction Community Path and MIT Property – Feasibility Study

Re: Introduction to rails-with-trails and related resources

General: Rails-with-Trails, which are trails located adjacent to active rail lines, are increasing throughout the country. A report conducted in 2000 by the USDOT identified 60 rails-with-trails in 20 states. More recently (2013), the Rails-to-Trails Conservancy produced a report that identified 161 trails in 41 states with another 60 projects in development. Nevertheless, these projects are often challenging given their unique acquisition, development, and management issues.

Rails-with-trails exist in a wide range of circumstances — trails alongside rural short line excursion railroads, trails within the right-of-way of class I freight rail, and transportation trails next to inner city transit. The current corridor conditions for this project include infrequent railroad operations at low speeds in a constricted area. Existing buildings establish an envelope within which the rail and potential trail would operate. The feasibility study for the trail must take into consideration future development adjacent to the corridor and the possibility of expanded light and heavy rail use. The Massachusetts Department of Transportation (MassDOT) and the Massachusetts Bay Transportation Authority (MBTA) are considering providing service along the existing rail line in the future. Although MassDOT has indicated a desire for two-track service in the future, no plans have been developed to date showing a second track or station locations. For the purposes of this study, the existing conditions have been assumed as the future conditions. The Massachusetts Institute of Technology (MIT) owns the corridor between Broadway and a point roughly 250 feet west of Pacific Street. and plans for future development may impact available set-backs, daylight, and access demands along the existing rail corridor. However, these potential changes provide an opportunity to safely incorporate a multi-use path.

Challenges: The following list represents the most prevalent themes related to rail-with-trail development and the initial assumptions of the design team. The paramount issues to address for the Grand Junction project include development and risk management strategies as well as the approach to managing operations to safely accommodate trail use.

1. Location and land ownership
    - Main Street to Massachusetts Avenue
        - Owned by MIT with 20-foot easement (10 feet off each side of the rail center line) for MassDOT
        - 22.5-foot vertical easement from top of rail for trains
        - Track area fenced at approximately the edge of easement line, from fence out is unencumbered by rail operations
    - Massachusetts Avenue to west of Pacific Street
        - Owned by MIT with 32-foot easement (16 feet off of either side of the rail center line) for trains
        - Additional 8-foot easement on south side to cover siding (to cover second track) for a total width of 40 feet
        - 22.5-foot vertical easement (for trains)
    - West of Pacific Street to 640 Memorial Drive
        - Owned by MassDOT
        - Approximately 80 to 85 feet wide
    - 640 Memorial Drive
        - Owned by MIT
        - Easement for rail is unclear
    - Streets and public sidewalks crossing the rail
        - Main St and Massachusetts Ave crossings owned and maintained by City of Cambridge
        - Easement (undefined) for rail
        - MIT owns the rail crossings at the Albany Garage and Pacific Street

2. Railroad operations and development
    - Currently infrequent and off-peak transfer of freight and commuter rail cars
    - Speed limit of 10 MPH
    - Easement and track must remain for current and potential future transportation uses including:
        - MBTA commuter rail
        - Freight service
        - DMU service
        - Urban Ring

3. Design elements
    - Basic dimensions for shared use path and rail-with-trail facilities based on MassDOT Design Guide 2006, with consideration of the AASTHO *Guide for the Development of Bicycle Facilities*, 2012 and Rails-with-Trails: Lessons Learned, United States Department of Transportation, 2002 are shown below:

	Preferred	**Minimum**	**Grand Junction**
Trail width	12-14 ft for busy corridors	10 ft min, 8 ft at pinch points	10-12 ft
Setback from nearest rail (not center of track)*	25 ft*	11 ft*	10 ft from centerline*
Shoulder	3 ft from vertical elements	2 ft	2 ft
Crossings of streets	Signalized at crossings of more than 10,000 vehicles a day	Should look and function like a regular road intersection, signalized or unsignalized. Refer to MUTCD Warrant #4 for path crossings.	Signalized crossings

*The setbacks shown in the table are the based on recommended guidance. In the Grand Junction Corridor, the setbacks were determined based on the existing easements, vertical barrier (fence), and infrequent and low speed usage and are less than the recommended minimum but have been determined as acceptable conditions.

    - Accommodation of truck and trail traffic in loading zones
    - Risk management strategies including designing for safety, prominent signage, regular inspection/remedial changes, and procedures for medical emergencies

4. Standards and Permitting Requirements
    - Vary with owner and funder. If MIT transfers easement to City of Cambridge or MassDOT for the trail, design may need to adhere to local and/or state design standards.
    - Potential need for additional environmental review and/or permitting.

5. Management and maintenance approach
    - If a multi-use path were to be constructed, there are multiple options for ownership and maintenance that need to be coordinated between MassDOT, the City of Cambridge, and MIT.

Resources: If the concept for a multi-use path along the Grand Junction Corridor moves beyond the feasibility study, path designers should draw on the resources listed below to develop a design framework for this corridor. While previous studies like USDOT's *Rails-with-Trails: Lessons*

Learned (2002), establish a strong safety record for these types of facilities, it is critical that this project be viewed in its unique context, as the legal and design issues vary depending on the jurisdiction and contractual arrangements of each situation.

As with any well designed trail project, it is recommended that we start with the highest standards as represented in the AASHTO, MUTCD, and/or *Rails-with-Trails: Lessons Learned* publications. Invariably, there will be a series of constraints and enhancements that will need to be accommodated to meet the specific needs of MIT and the railroad operator. The team's challenge is to strike a balance between high end trail planning/design with the operation, safety, and security concerns of MIT and the leasing railroads.

Guide for the Development of Bicycle Facilities, American Association of State Highway and Transportation Officials (2012);
https://bookstore.transportation.org/item_details.aspx?ID=1943

Manual on Uniform Traffic Control Devices, United States Department of Transportation (2009);
http://mutcd.fhwa.dot.gov/
Rails-with-Trails: Lessons Learned, United States Department of Transportation (2002);
http://www.fta.dot.gov/documents/RailsWithTrails.pdf

California Rails-with-Trails: A Survey of Trails Along Active Rail Lines, Rails-to-Trails Conservancy (2009);
http://www.railstotrails.org/resources/documents/ourWork/west/California_RWT_Survey.pdf

NCRA Policy and Procedures Manual: Trail Projects on the NWP Line Right-of Way, California North Coast Railroad Authority (2009);
http://www.northcoastrailroad.org/Agendas/2009/Item_G.8.pdf

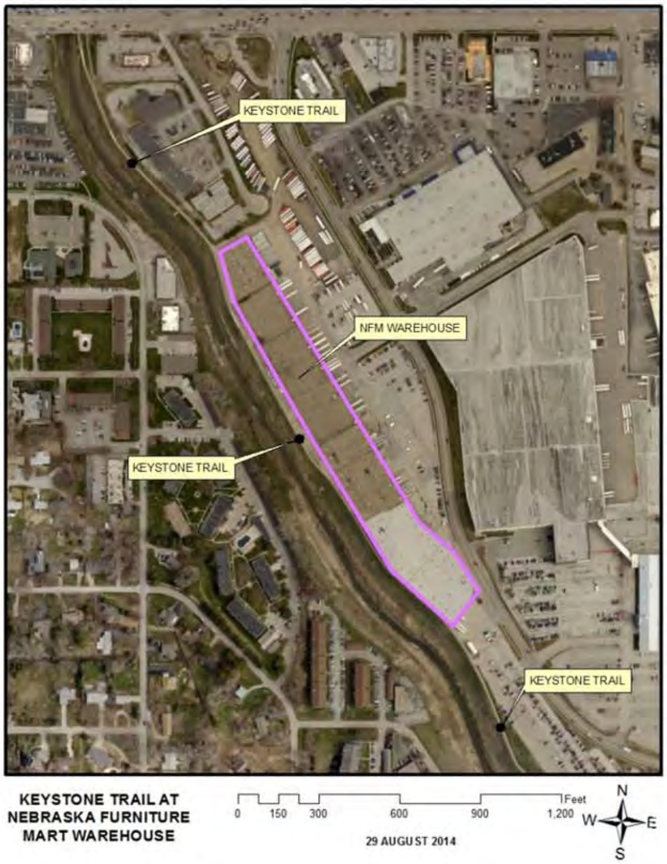
Pedestrian/Bicyclist Warning Devices and Sign at Highway-Rail and Pathway-Rail Grade Crossings, Illinois Center for Transportation (2013);
http://ict.illinois.edu/publications/report%20files/FHWA-ICT-13-013.pdf

Similar Trails: The team has compiled a collection of similar trails that either have interaction with freight and truck loading zones or are rails-with-trails. These trails are described on the following pages.

1. Keystone Trail (15 miles open), Omaha, Nebraska

Trail end points: Omaha and Bellevue, Nebraska
Web site: http://www.omahatrails.com/index.php/metro-trails/keystone/keystone-north

Photographs:
The photos below show existing signage along the trail that lets users know of the possibility of trucks on the trail. The additional aerial photo is marked to show the proximity of the trail and the warehouse.


KEYSTONE TRAIL
NFM WAREHOUSE
KEYSTONE TRAIL
KEYSTONE TRAIL
KEYSTONE TRAIL AT NEBRASKA FURNITURE MART WAREHOUSE
0
150
300
600
900
1,200
Feet
29 AUGUST 2014
N
W
E
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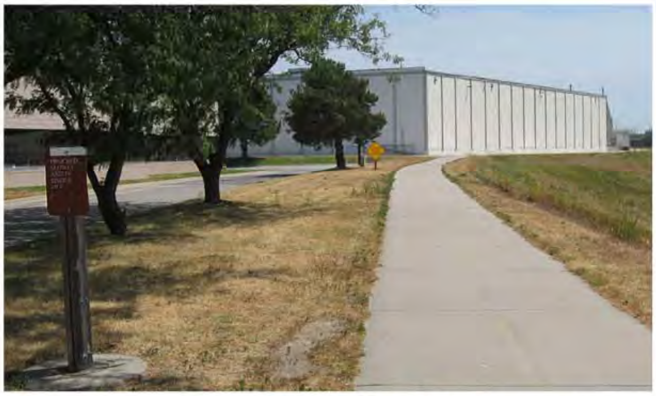


Front guide sign states to "PROCEED SLOWLY AND IN SINGLE FILE' and the warning sign states 'CAUTION TRUCKS AHEAD'.

Treatment: Signage

Trail / loading zone interaction:
The Keystone Trail runs adjacent to the Nebraska Furniture Mart warehouse. Trucks serving the warehouse use the trail for access to load and unload material. The area of truck and trail interaction is approximately 1/3-mile in length. To date there have been no problems or reports of accidents in the interaction of trail users and vehicles.

2. West Duwamish Trail (under development), Seattle, Washington
End points: 8th Avenue South and South Kenyon Street
Web site: http://www.seattle.gov/transportation/westduwamishtrail.htm
Fact sheet: http://www.seattle.gov/transportation/docs/WDFactSheet.pdf

Photographs:
The images below, from Google Earth, show the heavy industrial area which the trail will traverse.

Google earth

Google earth

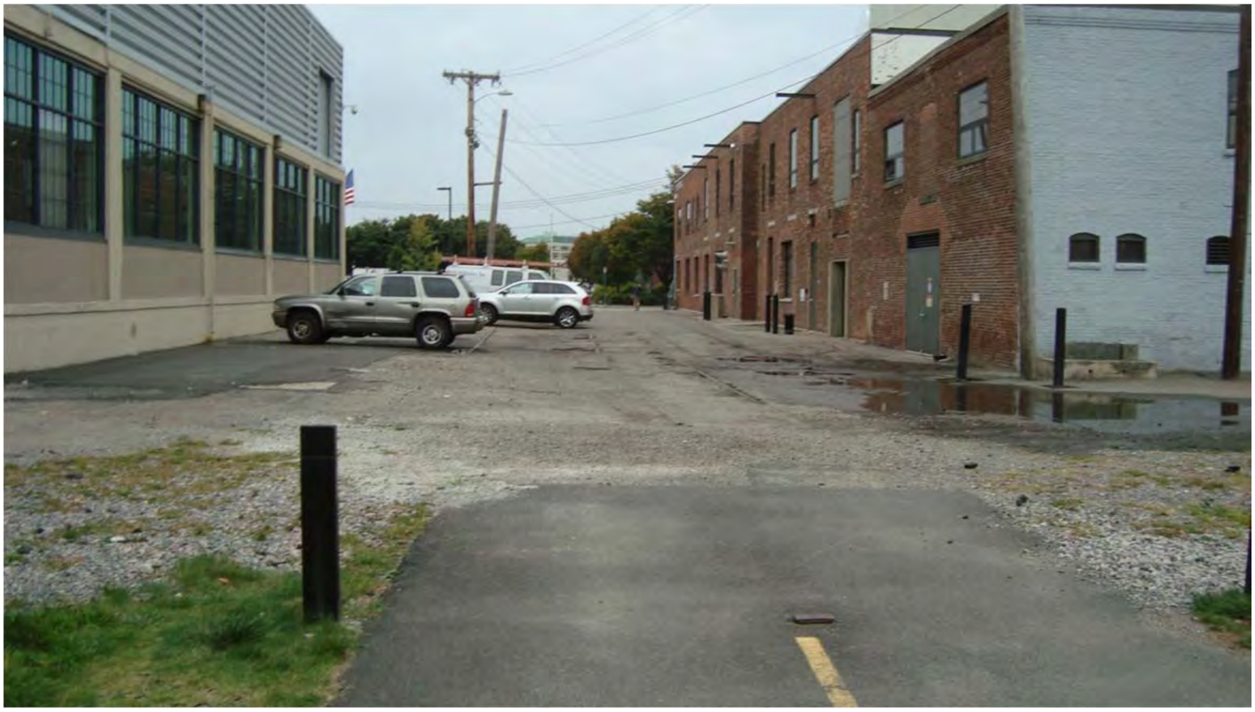
Treatment: Signage

Trail / loading zone interaction:
The Seattle Department of Transportation (SDOT) is designing an extension of the West Duwamish Trail, which now ends at South Holden Street and 2nd Avenue South. This extension will create a protected connection to 8th Avenue South and South Kenyon Street, where an existing bicycle route continues south. The area of truck and trail use interaction is approximately five blocks in length on South Portland Street (2nd Avenue South to 8th Avenue South).

There will be a protected bicycle trail (curb and crushed rock) through this five-block section. Signage will be installed on the trail warning bicyclists that they are entering an industrial area, to use caution, and to maintain a safe speed.

3. Waverly Street Extension and Path (under construction), Cambridge, Massachusetts
End points: Erie Street and Merriam Street
Web site:
http://www.cambridgema.gov/CDD/Projects/Transportation/waverlystextension.aspx

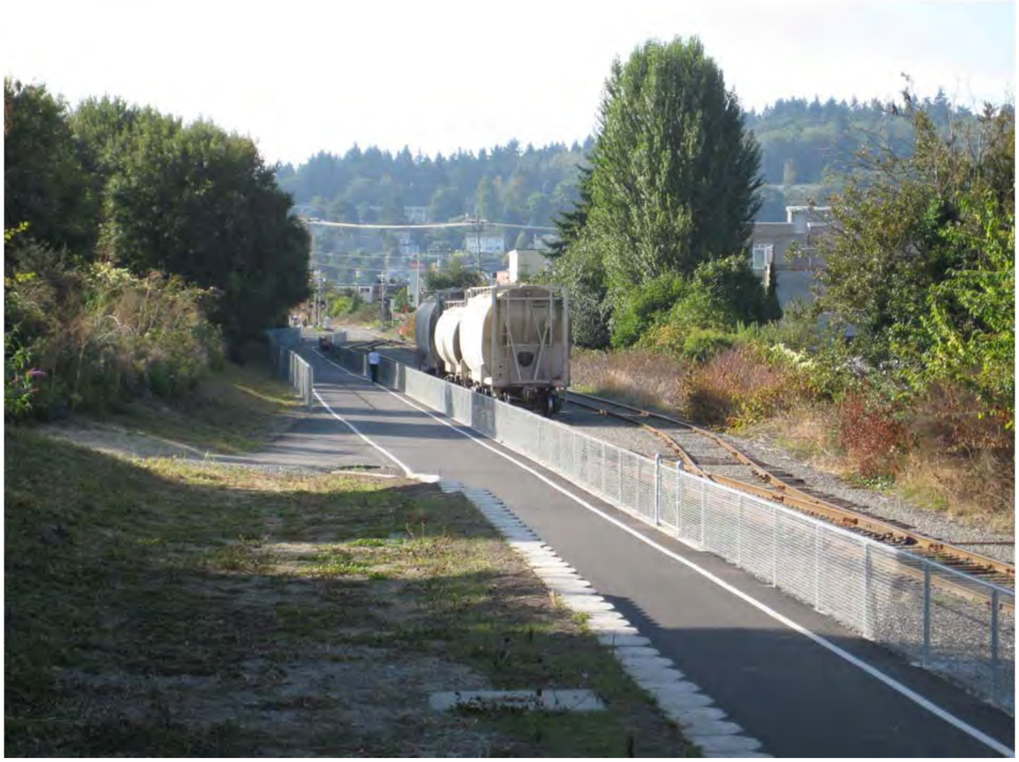
Photographs:
The picture below shows the area which the trail will traverse and connect to an existing path.



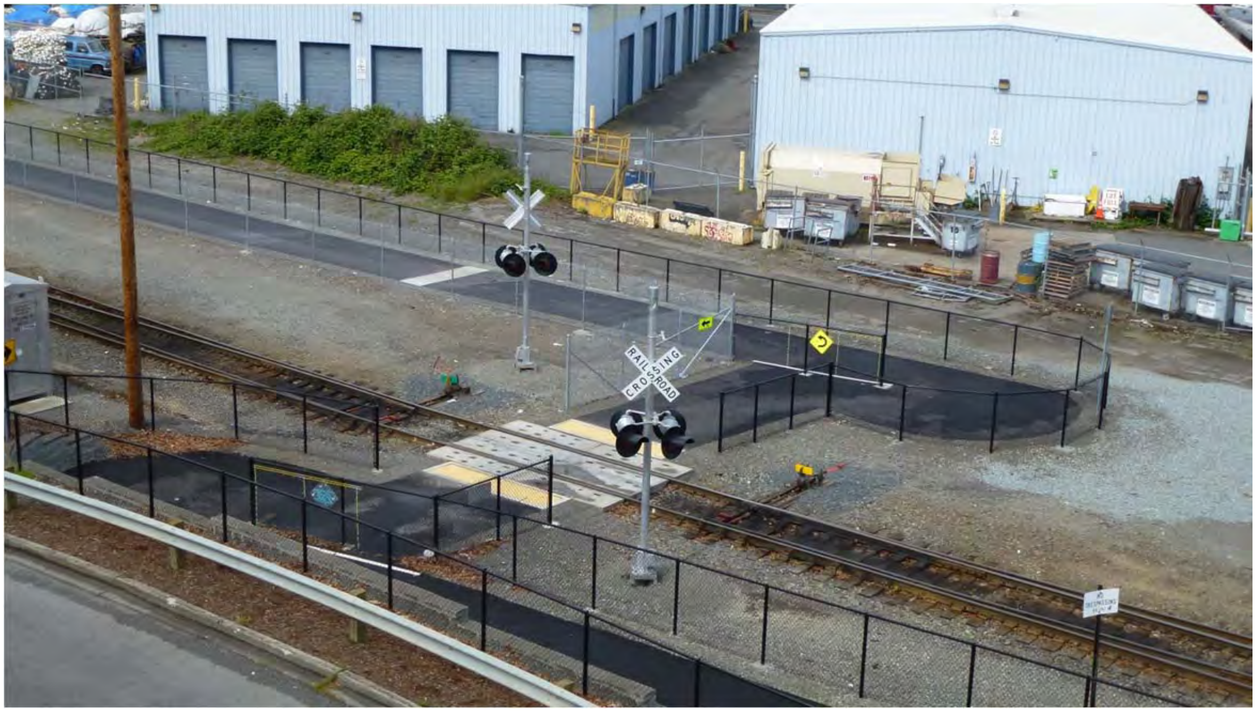
Treatment: Material

Trail / loading zone interaction:
The existing roadway will become a path with landscaping on either side. To accommodate loading for the building on the western side of the proposed path, a service drive will be provided along the building made of unit pavers to delineate the space.

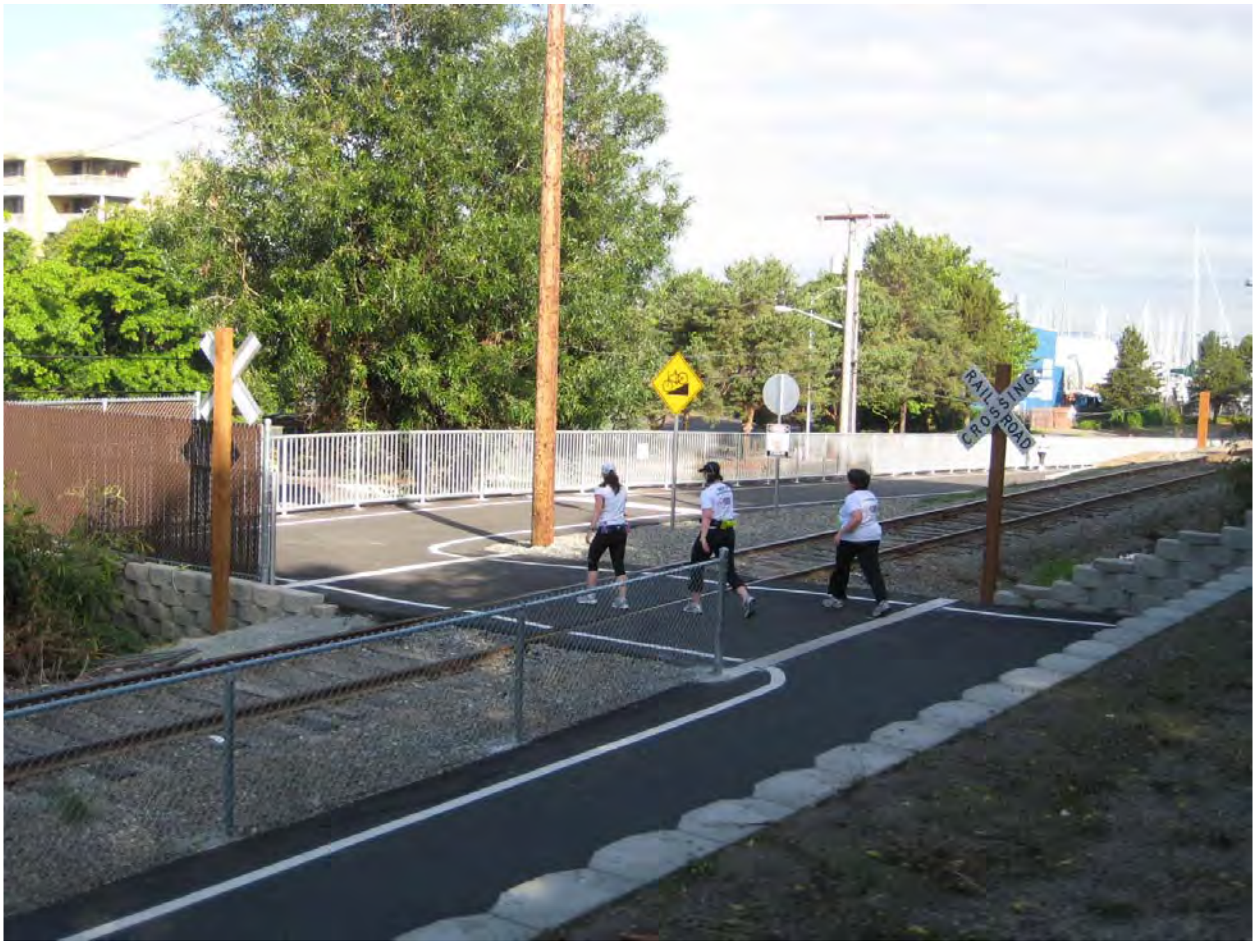
4. Examples of Rails-with-Trails



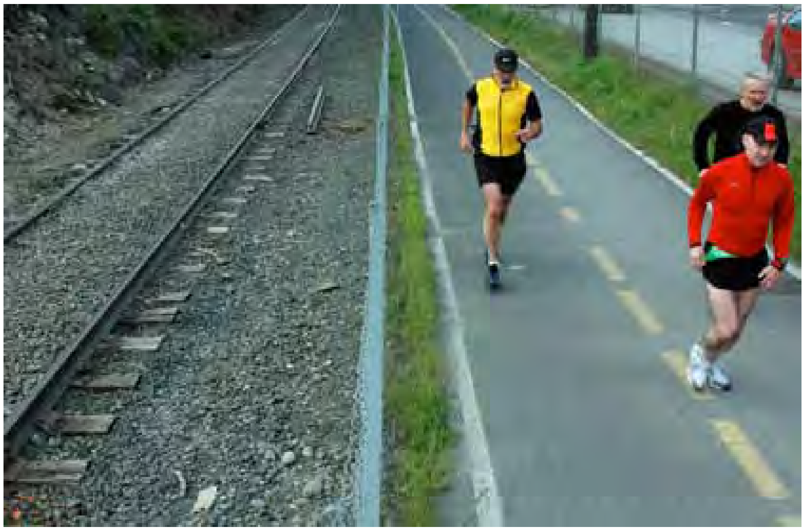
Seattle, Washington


RAILROAD CROSSING

Burke-Gilman Trail, Seattle, WA


RAIL ROAD
CROSSING

Burke-Gilman Trail, Seattle, WA



Springwater Corridor, Oregon (Source: Bryce Hall)

Appendix E

Project Cost

Massachusetts Institute of Technology
Grand Junction - Conceptual Cost Estimate

Corridor Segment	Project Cost
Main Street to Massachusetts Avenue	$3,600,000
Massachusetts Avenue to Pacific Street	$3,300,000
Pacific Street to Henry Street	$6,000,000
Traffic Signal Improvements	$600,000
Total	$13,500,000

Notes

1. Project develops from the faces of the buildings to the north to 10' off the northern track centerline.
2. Excavation included in cost is for pavement box only (4" Hot Mix Asphalt over 8" gravel).
3. Unit prices are based on 2014 MassDOT-District 6 Weighted Bid Prices
4. Estimate does not include right-of-way or land-acquisition costs.
5. Utility work not specifically listed in the estimate is not included in the construction costs.
6. Additional pedestrian rail crossing at Fort Washington Park is not included in the estimate.
7. Allowances for hazardous material, stormwater management, landscaping, and non-construction costs (such as design, permitting, owner's project management, etc.) are included in the above project cost.

Main Street to Massachusetts Avenue

ITEM	QUANTITY	UNIT	UNIT PRICE	COST
Full Depth Reconstruction	21,600	sf	$9.00	$194,400.00
Pavement Mill & Overlay	22,720	sf	$5.00	$113,600.00
Loam & Seed	0	sf	$2.00	$0.00
Pavement Markings	23,822	sf	$3.50	$83,377.00
Signs	208	sf	$13.00	$2,700.75
Fencing	1,385	lf	$30.00	$41,550.00
Lighting	1	ls	$412,033.33	$412,033.33
Catch Basin	5	ea	$2,500.00	$12,500.00
Police Call Box	2	ea	$5,000.00	$10,000.00
Landscaping				$400,000.00
Rain Garden				$25,000.00
Stormwater Management				$250,000.00
Hazardous Material				$150,000.00
Miscellaneous (20% excluding allowances)				$174,032.22
Construction Subtotal				*$1,869,193.30*
Design & Construction Phase Services (15% excluding misc. construction costs)				$254,274.16
Environmental Permitting & Services (5% excluding misc. construction costs)				$84,758.05
Owner Project Management (20% excluding misc. construction costs)				$339,032.22
Program contingency (10% excluding misc. construction costs)				$169,516.11
Subtotal				*$2,716,773.84*
Contingency (30%)				$815,032.15
Total				*$3,531,805.99*
SAY				$3,600,000.00

Notes

1. Project develops from the faces of the buildings to the north to 10' off the northern track centerline.
2. Excavation is for pavement box only (4" Hot Mix Asphalt over 8" gravel).
3. Unit prices are based on 2014 MassDOT-District 6 Weighted Bid Prices
4. Estimate does not include right-of-way or land acquisition costs.
5. Pavement markings unit cost includes premium for skid-resistant and/or decorative markings.
6. Signs unit cost includes premium for posts and mounting.
7. The Miscellanous category accounts for cost of items such as mobilization, traffic management, etc.
8. Hazardous Material allowance was divided between the three corridor segments based on length of full depth reconstruction within the segment, totalling $1M for the entire project
9. Rain garden allowance was divided between the three corridor segments based on total length of segment, totalling $100,000 for the entire project
10. Landscaping allowance was divided between Main-Mass Ave (4 locations) and Mass-Pacific (1 location), totalling $500,000 for the project.
11. Landscaping allowance within non-MIT owned segment (Pacific-Henry) assumed at $500,000.
12. Stormwater Management allowance was divided between the three corridor segments based on total length of segment, totalling $1M for the entire project

▨ = Input Cell

Full Depth Reconstruction:
Length: 675
Width: 32
Area: 21,600

Pavement Mill & Overlay:
Length: 710
Width: 32
Area: 22,720

Loam & Seed:
Length: 0
Width: 0

Total Length (ft): 1,385
Total Area (sf): 44,320

Loam & Seed (sf)	0	
Pavement Markings (sf)	23,822	All of bike path painted for delineation. Then assume 10% of entire roadway is painted for markings
Signs (sf)	208	Assume 7.5sf per 100' of length on each side, or 15sf per 100' of length
Fencing (lf)	1,385	Along entire length (one side)
Lighting (ea)	37	One light every 75' of length on each side of road (16' tall, designer style). Price includes pullboxes. Controller included in Main-Mass Ave Segment
Conduit (lf)	2,770	Along entire length (both sides)
Catch Basin (ea)	5	Assume 5 catch basins per segment
Police Call Boxes (ea)	2	Assume 2 per project segment

Massachusetts Avenue to Pacific Street

ITEM	QUANTITY	UNIT	UNIT PRICE	COST
Full Depth Reconstruction	42,875	sf	$9.00	$385,875.00
Pavement Mill & Overlay	0	sf	$5.00	$0.00
Loam & Seed	0	sf	$2.00	$0.00
Pavement Markings	21,438	sf	$3.50	$75,031.25
Signs	184	sf	$13.00	$2,388.75
Fencing	1,225	lf	$30.00	$36,750.00
Lighting	1	ls	$351,166.67	$351,166.67
Catch Basin	5	ea	$2,500.00	$12,500.00
Police Call Box	2	ea	$5,000.00	$10,000.00
Landscaping				$100,000.00
Rain Garden				$25,000.00
Stormwater Management				$250,000.00
Hazardous Material				$300,000.00
Miscellaneous (20% excluding allowances)				$174,742.33
Construction Subtotal				*$1,723,454.00*
Design & Construction Phase Services (15% excluding misc. construction costs)				$232,306.75
Environmental Permitting & Services (5% excluding misc. construction costs)				$77,435.58
Owner Project Management (20% excluding misc. construction costs)				$309,742.33
Program contingency (10% excluding misc. construction costs)				$154,871.17
Subtotal				*$2,497,809.83*
Contingency (30%)				$749,342.95
Total				*$3,247,152.78*
SAY				$3,300,000.00

Notes

1. Project develops from the faces of the buildings to the north to 10' off the northern track centerline.
2. Excavation is for pavement box only (4" Hot Mix Asphalt over 8" gravel).
3. Unit prices are based on 2014 MassDOT-District 6 Weighted Bid Prices
4. Estimate does not include right-of-way or land acquisition costs.
5. Pavement markings unit cost includes premium for skid-resistant and/or decorative markings.
6. Signs unit cost includes premium for posts and mounting.
7. The Miscellanous category accounts for cost of items such as mobilization, traffic management, etc.
8. Hazardous Material allowance was divided between the three corridor segments based on length of full depth reconstruction within the segment, totalling $1M for the entire project
9. Rain garden allowance was divided between the three corridor segments based on total length of segment, totalling $100,000 for the entire project
10. Landscaping allowance was divided between Main-Mass Ave (4 locations) and Mass-Pacific (1 location), totalling $500,000 for the project.
11. Landscaping allowance within non-MIT owned segment (Pacific-Henry) assumed at $500,000.
12. Stormwater Management allowance was divided between the three corridor segments based on total length of segment, totalling $1M for the entire project

▨ = Input Cell

Full Depth Reconstruction:
Length: 1,225
Width: 35
Area: 42,875

Pavement Mill & Overlay:
Length: 0
Width: 0
Area: 0

Loam & Seed:
Length: 0
Width: 0

Total Length (ft): 1,225
Total Area (sf): 42,875

Loam & Seed (sf)	0	
Pavement Markings (sf)	21,438	All of bike path painted for delineation. Then assume 10% of entire roadway is painted for markings
Signs (sf)	184	Assume 7.5sf per 100' of length on each side, or 15sf per 100' of length
Fencing (lf)	1,225	Along entire length (one side)
Lighting (ea)	33	One light every 75' of length on each side of road (16' tall, designer style). Price includes pullboxes. Controller included in Main-Mass Ave Segment
Conduit (lf)	2,450	Along entire length (both sides)
Catch Basin (ea)	5	Assume 5 catch basins per segment
Police Call Boxes (ea)	2	Assume 2 per project segment

Pacific Street to Henry Street

ITEM	QUANTITY	UNIT	UNIT PRICE	COST
Full Depth Reconstruction	32,900	sf	$9.00	$296,100.00
Pavement Mill & Overlay	0	sf	$5.00	$0.00
Loam & Seed	47,000	sf	$2.00	$94,000.00
Pavement Markings	36,190	sf	$3.50	$126,665.00
Signs	353	sf	$13.00	$4,582.50
Fencing	2,350	lf	$30.00	$70,500.00
Lighting	1	ls	$673,666.67	$673,666.67
Catch Basin	5	ea	$2,500.00	$12,500.00
Police Call Box	2	ea	$5,000.00	$10,000.00
Landscaping				$500,000.00
Rain Garden				$50,000.00
Stormwater Management				$500,000.00
Hazardous Materials				$550,000.00
Miscellaneous (20% excluding allowances)				$257,602.83
Construction Subtotal				*$3,145,617.00*
Design & Construction Phase Services (15% excluding misc. construction costs)				$433,202.13
Environmental Permitting & Services (5% excluding misc. construction costs)				$144,400.71
Owner Project Management (20% excluding misc. construction costs)				$577,602.83
Program contingency (10% excluding misc. construction costs)				$288,801.42
Subtotal				*$4,589,624.08*
Contingency (30%)				$1,376,887.23
Total				*$5,966,511.31*
SAY				$6,000,000.00

Notes

1. Project develops from the faces of the buildings to the north to 10' off the northern track centerline.
2. Excavation is for pavement box only (4" Hot Mix Asphalt over 8" gravel).
3. Unit prices are based on 2014 MassDOT-District 6 Weighted Bid Prices
4. Estimate does not include right-of-way or land acquisition costs.
5. Pavement markings unit cost includes premium for skid-resistant and/or decorative markings.
6. Signs unit cost includes premium for posts and mounting.
7. The Miscellanous category accounts for cost of items such as mobilization, traffic management, etc.
8. Hazardous Material allowance was divided between the three corridor segments based on length of full depth reconstruction within the segment, totalling $1M for the entire project
9. Rain garden allowance was divided between the three corridor segments based on total length of segment, totalling $100,000 for the entire project
10. Landscaping allowance was divided between Main-Mass Ave (4 locations) and Mass-Pacific (1 location), totalling $500,000 for the project.
11. Landscaping allowance within non-MIT owned segment (Pacific-Henry) assumed at $500,000.
12. Stormwater Management allowance was divided between the three corridor segments based on total length of segment, totalling $1M for the entire project

▨ = Input Cell

Full Depth Reconstruction:
Length: 2,350
Width: 14
Area: 32,900

Pavement Mill & Overlay:
Length: 0
Width: 0
Area: 0

Loam & Seed:
Length: 2,350
Width: 20

Total Length (ft): 2,350
Total Area (sf): 32,900

Loam & Seed (sf)	47,000	
Pavement Markings (sf)	36,190	All of bike path painted for delineation. Then assume 10% of entire roadway is painted for markings
Signs (sf)	353	Assume 7.5sf per 100' of length on each side, or 15sf per 100' of length
Fencing (lf)	2,350	Along entire length (one side)
Lighting (ea)	63	One light every 75' of length on each side of road (16' tall, designer style). Price includes pullboxes. Controller included in Main-Mass Ave Segment
Conduit (lf)	4,700	Along entire length (both sides)
Catch Basin (ea)	5	Assume 5 catch basins per segment
Police Call Boxes (ea)	2	Assume 2 per project segment

Traffic Signals

LOCATION	QUANTITY	UNIT	UNIT PRICE	COST
Mass Ave Crossing	1	ls	$175,000.00	$175,000.00
Main Street Crossing	1	ls	$150,000.00	$150,000.00
Adjacent Intersection Improvements	1	ls	$60,000.00	$60,000.00
Subtotal				*$385,000.00*
Contingency (30%)				$115,500.00
Total				*$500,500.00*
SAY				$600,000.00

Appendix F

Liability Issues

Corcoran
& Associates, P.C.

MEMORANDUM

TO: **Thomas Doolittle, Don Kindsvatter**
Kleinfelder, Inc.

FROM: **Edward J. Corcoran**
Corcoran & Associates, PC

DATE: **October 2, 2014**

SUBJECT: **Liability and Risk Management for the proposed Grand Junction Shared-Use Path**

Property Description and Ownership

MIT has engaged Kleinfelder to evaluate the feasibility of developing a shared-use recreational path within land formerly owned by one or more railroad companies and currently owned by MIT (the "MIT Land"). MIT owns the land in fee; the Massachusetts Department of Transportation ("MassDOT") owns a railroad easement (the "MassDOT RR ROW") within which it operates a portion of the Grand Junction Branch (the "Grand Junction Branch"). Freight rail traffic along the MassDOT RR ROW operates approximately three to four times per weekday at low speed and low volume, mostly at night. It is understood that rail traffic will continue to operate and may increase into the future.

The central study area in question is a corridor of property within the MIT Land that is located on the northerly side of/behind MIT buildings that front on Vassar Street and on the southerly side of/behind MIT buildings that front on Albany Street. MIT's ownership of the MIT Land extends westerly from Mass. Ave. approximately 1,250 feet to the extension of Pacific Street, and easterly from Mass. Ave. approximately 1,400 feet to Main Street. On the westerly side of Mass. Ave. and within the MassDOT RR Right of Way, there are two tracks for most of this segment; there is a single track on the easterly side of Mass. Ave.

The full width of the MIT Land generally runs from 75 to 85 feet, from building to building; this width is not uniform. The width of the MassDOT RR ROW is 20 feet east of Mass. Ave. and 40 feet west of Mass. Ave. to Pacific Street. A service drive runs along a narrow strip of land between the southerly sideline of the MassDOT RR ROW and adjacent buildings on the easterly side of Mass. Ave., which ranges in width between 17 and 35 feet. The width of the strip on the northerly side of the MassDOT RR ROW ranges between 18 and 30 feet. There are also numerous gas storage tanks and other obstructions located within these strips of land which further constrict their available widths. These strips serve to provide vehicular access for deliveries and service and other purposes to the MIT buildings, which may increase and/or change as MIT continues to develop its campus. Deliveries are currently made on a daily basis and traverse the service drives on both sides of the RR ROW.

Kleinfelder has identified a route with adequate width for a two-way path, under appropriate design standards, and a service drive for one-way vehicular traffic for most of the length of the MIT Land, except at locations where vehicles will have to turn to and from the vehicular way in order to maneuver at loading docks or to enter/exit to/from driveways leading to Albany Street (e.g., the Pacific Street extension). In that case there is a potential for conflict between bicycles and pedestrians and delivery or service vehicles. This route ("Rails with Trails Path") runs north of the MassDOT RR ROW between Main Street and Mass. Ave. and on a portion of the MassDOT RR ROW west of Mass. Ave.

In conjunction with the Kleinfelder report, which assesses the feasibility of constructing a proposed bike path along the portion of the MIT Land, I have preliminarily identified certain types of risks and liabilities that MIT may incur in connection with the construction and operation of a multi-use path adjacent to the Grand Junction Branch, which might by use, rather than by design, operate within MIT Land outside the proposed route. The location of the proposed shared-use path is also adjacent to other land owned by MIT where buildings are located and used for research, academic, business and other operations.

As noted above, one of the significant challenges posed by the proposed multi-use path results from the narrow footprint available outside the MassDOT RR ROW, and bounded by the edge of the former RR property constituting the MIT Land, for two-way bicycle, and pedestrian, as well as delivery and service vehicle access (for third party vehicles requiring rear access to MIT buildings abutting the Grand Junction Branch), and further restricted by the MassDOT RR ROW.

If MassDOT and its agent, the MBTA, will not authorize use of a portion of the MassDOT RR ROW to extend the width of the proposed shared-use path in the preferred location north of the tracks west of Mass. Ave., the proposed design for two-way travel for both bicycles and pedestrians will be too narrow for shared used with vehicles, and could pose an unacceptable hazard to all using the path against oncoming traffic, as well as interfere with the current use of the area by service and delivery trucks for MIT's current and future operations.

Another challenge involves MIT's planning for future development of its land directly adjacent to the proposed path. If such a path were to be installed, MIT would need to consider the additional hazards and extra coordination of construction activities that would take place in such close proximity to an active path. These concerns will impose additional limitations and costs on MIT's ability to use and develop its own land.

Statutory Protections for MIT as Landowner

Several statutes have been cited as providing MIT with protection against liability for personal injury, death and/or property damage resulting from construction or use of any portion of the shared-use path on its land. With the exception of the recreational use statute ("RUS", as hereafter described), the remainder of the statutes cited do not provide any protection to MIT as the landowner, because they contemplate ownership by a municipality and/or a railroad company. My general understanding regarding the applicability of these statutes follows:

1. MGL c. 21, § 17C, the RUS, generally provides protection to landowners who allow the public to use their land for recreational purposes without charge. However, in the case of the proposed multi-use path on MIT land, there are certain unique conditions faced by MIT that are not specifically addressed by the statute or in any case law. More specifically, the fact that portions of this path will also be used by vehicles to provide services to MIT operations may negate the immunity provided under the RUS. In addition, MIT may not enjoy protection from claims brought by pedestrians or cyclists who may wander off the share-use path onto MIT property immediately adjacent to it, whether intentionally or otherwise.

2. MGL c. 82, §35A addresses land owned and developed by a city or town, and which is subject to a right of reversion by a railroad owner or other authority to reclaim the property for rail use. The statute appears to exempt only a railroad owner from liability arising from public use of its land by the city or town. In the case of the currently proposed path, MIT is the owner of the land and thus does not get the benefit of the protections afforded a railroad under this statute.

3. Similarly, MGL c. 160, §93 and §93A, as well as MGL c. 258, §1, do not apply to MIT as a private landowner.

To the extent that immunity might apply under the RUS or that MIT may be able to avail itself of other legal defenses, neither will resolve the fact that MIT would still need to respond to, and defend itself against, claims of third parties for injuries and/or damages that could arise from this new use of this area of MIT-owned land along the Grand Junction Branch. Such response and defense would involve both direct and indirect costs to MIT, regardless of the applicability of certain statutes. While the types of claims that may arise from this new path do not necessarily represent new exposures to MIT, both the number of claims and the probability of more significant injuries are likely to increase and may well include claims arising due to railroad operations or actions, which provide very limited, if any, legal recourse under current law.

Conclusion

Given the nature of the current use of the MIT Land, its impact on plans for future development and the physical constraints associated with adding the path to a such narrow corridor, it is clear that the development of a shared use path will create a new set of risks for MIT. These include a significant increase in the conflict of uses (current and future) that will arise from the "invitation" for a larger number of pedestrians and bicyclists to enter the MIT Land in order to enjoy the path.

In that regard, if development of the shared-use path moves forward, then design and construction of such a facility should incorporate a set of safety and management measures to help mitigate these risks, including fencing, signage, pavement materials and marking, lighting and other measures. While such measures should help to reduce the number and/or mitigate the severity of incidents along and adjacent to the path, they will neither prevent accidents from happening nor prevent claims from being lodged against MIT, whether legally viable or not.

In light of existing physical challenges, limitations associated with statutory immunities and other defenses, development impediments, and risk and safety considerations posed by the proposed development of the multi-use path, MIT must be sure that its realistic concerns are understood by others and evaluate the extent of commitment from interested parties regarding the apportionment of responsibility for assuming and managing such risks for further consideration of this path on MIT land. Such assumption and management must be addressed within all disciplines, including, but not limited to, design, construction, maintenance, snow & ice removal, security, relocation of existing obstructions or hazards, etc. (See Appendix F.)

Appendix G-1

Advisory Committee Presentation

July 22, 2014

Advisory Committee Meeting

July 9, 2014

This material was presented to the Grand Junction Corridor Study Advisory Committee with a narrative supplementing the graphics included here. We have attempted to summarize the key points of that narrative as boxed text on most of the images.

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Agenda

1. Summary of Pedestrian and Bicycle committee meetings and Open House
2. Overview of conditions analysis
    - East of Mass Ave (the specifics)
    - West of Mass Ave (the specifics)
    - Overlapping uses
3. Regional Connections to the west
4. Crossing Mass Ave and Main Street
5. Summary and next steps

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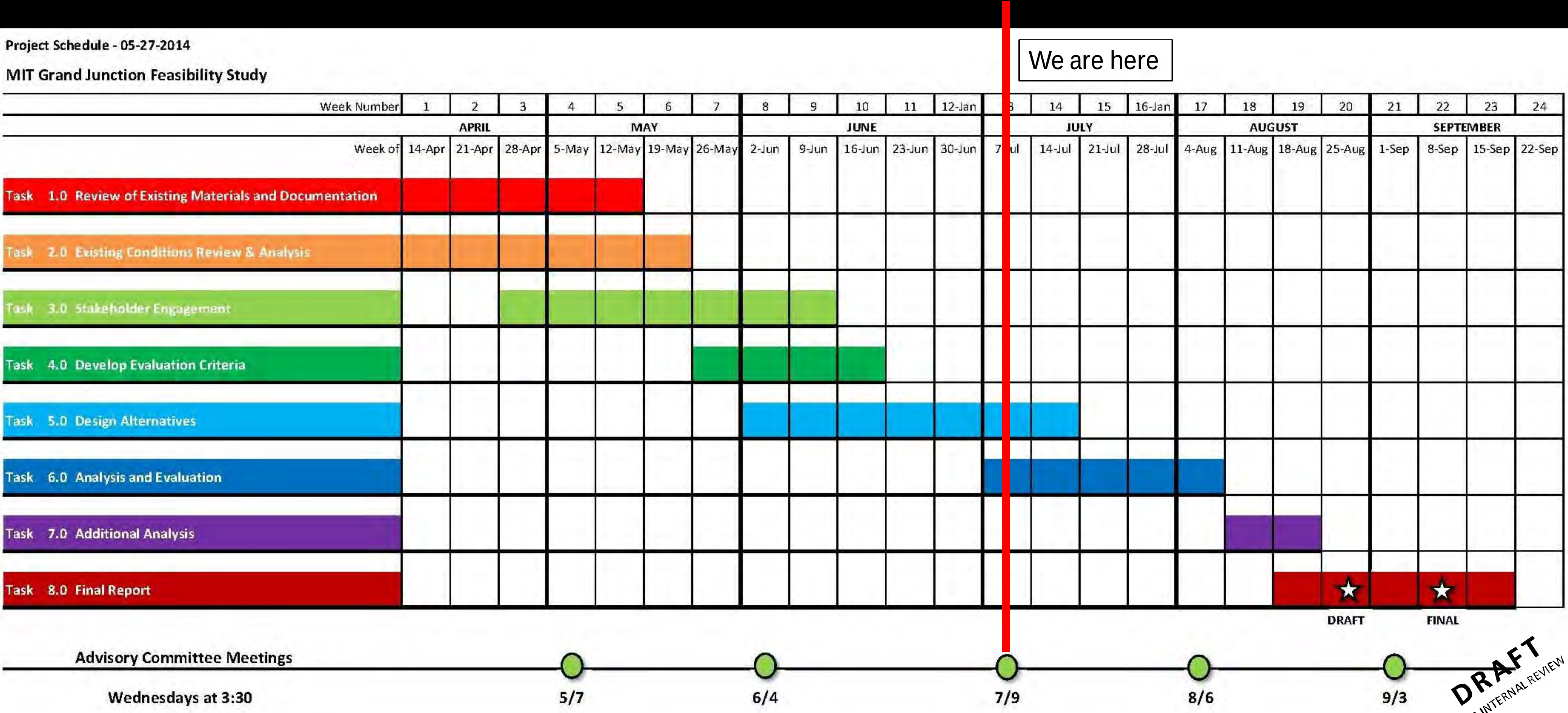
FOR INTERNAL REVIEW

MIT GRAND JUNCTION CORRIDOR FEASIBILITY STUDY

Project Schedule - 05-27-2014

MIT Grand Junction Feasibility Study



We are here

Week Number	1	2	3	4	5	6	7	8	9	10	11	12-Jan	3	14	15	16-Jan	17	18	19	20	21	22	23	24
	APRIL			MAY				JUNE					JULY				AUGUST				SEPTEMBER			
Week of	14-Apr	21-Apr	28-Apr	5-May	12-May	19-May	26-May	2-Jun	9-Jun	16-Jun	23-Jun	30-Jun	7 ul	14-Jul	21-Jul	28-Jul	4-Aug	11-Aug	18-Aug	25-Aug	1-Sep	8-Sep	15-Sep	22-Sep
Task 1.0 Review of Existing Materials and Documentation	🟥	🟥	🟥	🟥	🟥																			
Task 2.0 Existing Conditions Review & Analysis	🟧	🟧	🟧	🟧	🟧	🟧																		
Task 3.0 Stakeholder Engagement			🟩	🟩	🟩	🟩	🟩	🟩	🟩															
Task 4.0 Develop Evaluation Criteria							🟩	🟩	🟩	🟩														
Task 5.0 Design Alternatives								🟦	🟦	🟦	🟦	🟦	🟦	🟦										
Task 6.0 Analysis and Evaluation													🟦	🟦	🟦	🟦	🟦							
Task 7.0 Additional Analysis																		🟪	🟪					
Task 8.0 Final Report																			🟥	★ DRAFT	🟥	★ FINAL	🟥	

Advisory Committee Meetings

Wednesdays at 3:30

●	●	●	●	●
5/7	6/4	7/9	8/6	9/3

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Design Approach

- The GJC is part of a larger network of pedestrian and bicycles connections
- Assume service drives as one way (with limited exceptions)
- Where bicycles and vehicles overlap treat as a shared street
- Service vehicles scheduled to avoid peak bicycle traffic
- Obstacles can be moved or eliminated over time, buildings are harder
- Regional bicycle traffic will grow when connections to Allston and Somerville are established
- Enhance and increase the number of cross-corridor connections

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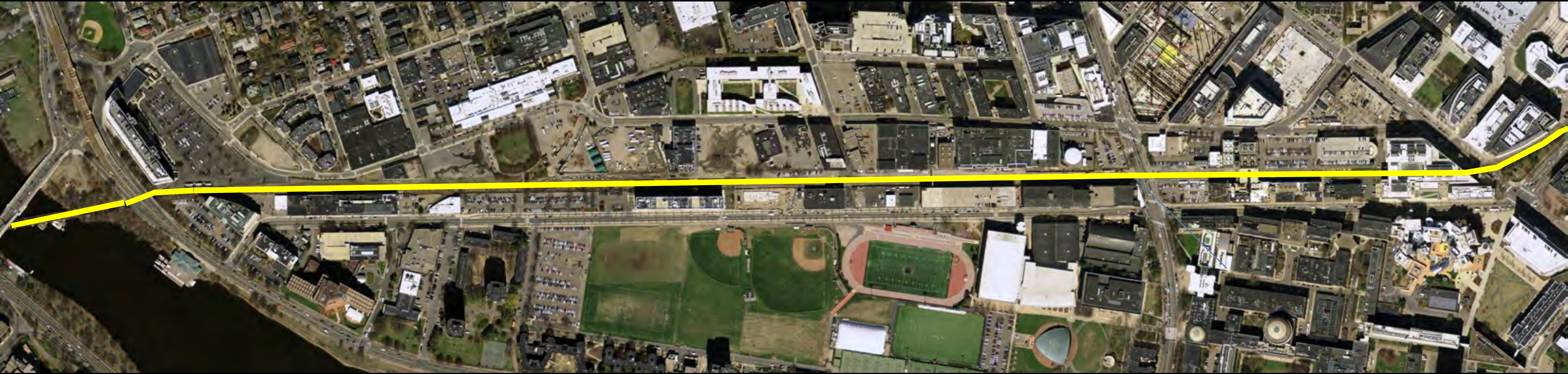
Not an Isolated Path



The Grand Junction Corridor is not an isolated path...

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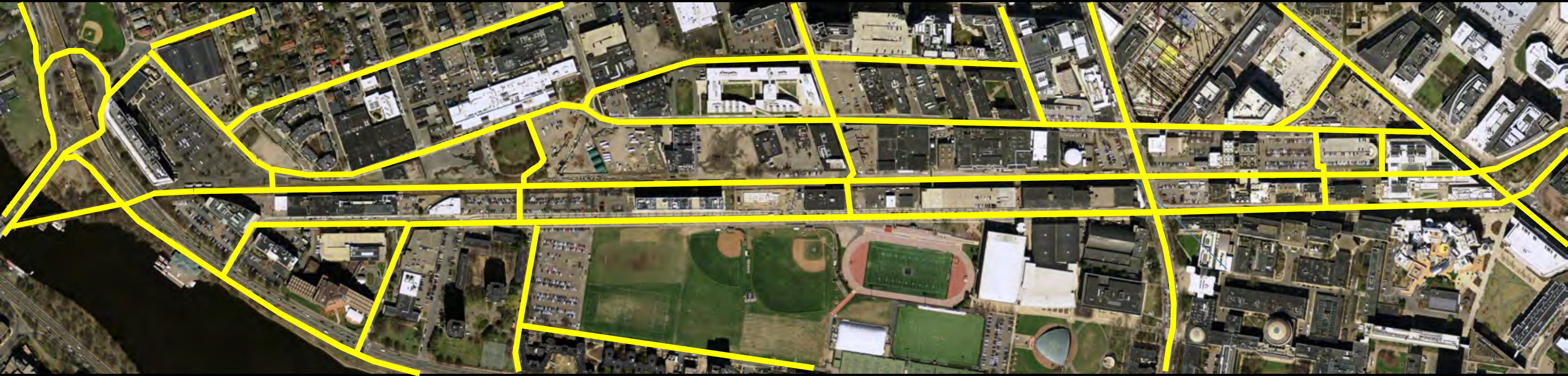
A Network of Links



...it should be regarded as a series of links in a larger network.

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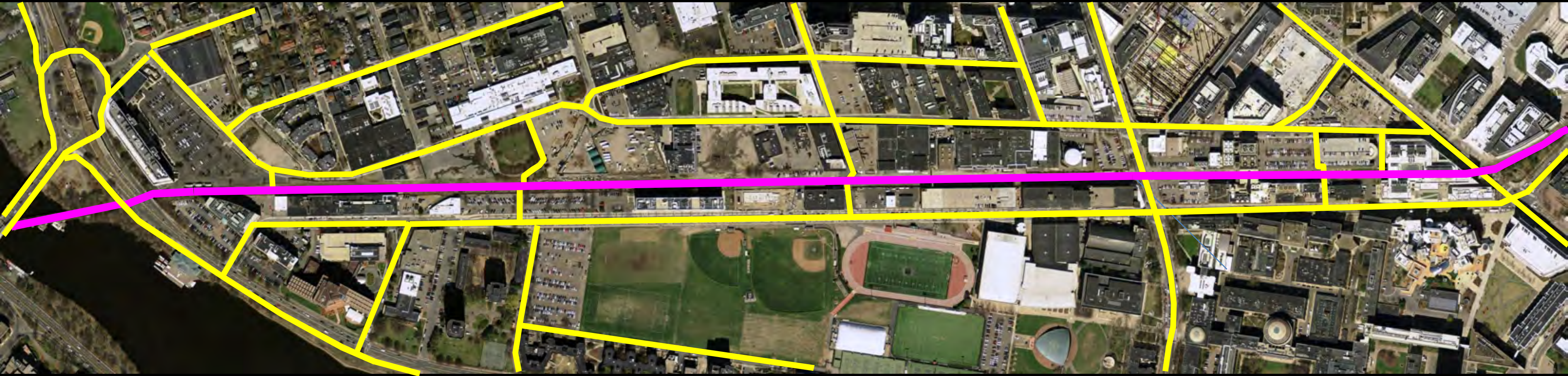
A Choice of Multiple Connections



Although trips may be solely along the GJ Corridor…

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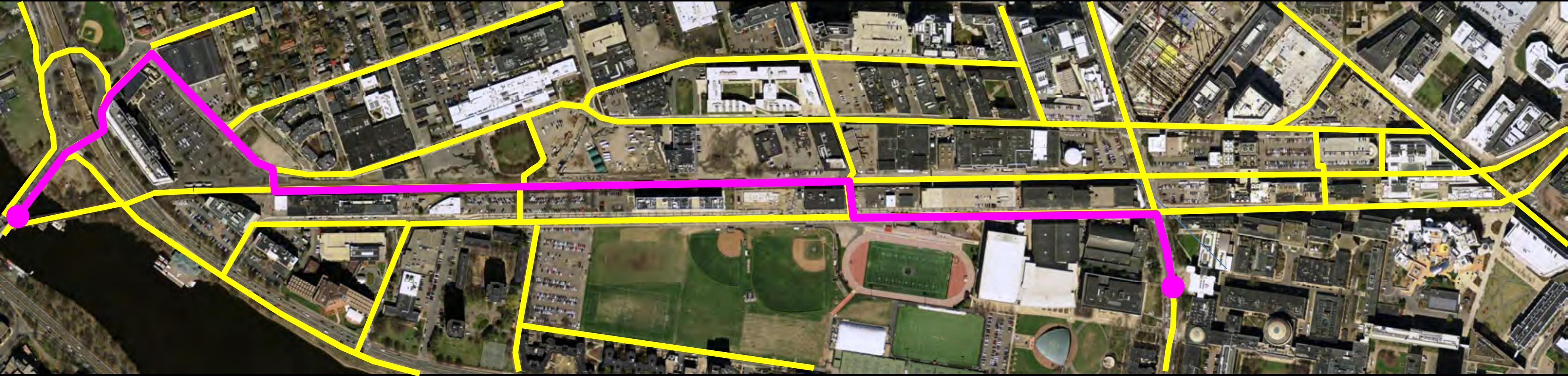
A Choice of Multiple Connections



...many trips may use the GJ Corridor for only a part of the total trip.

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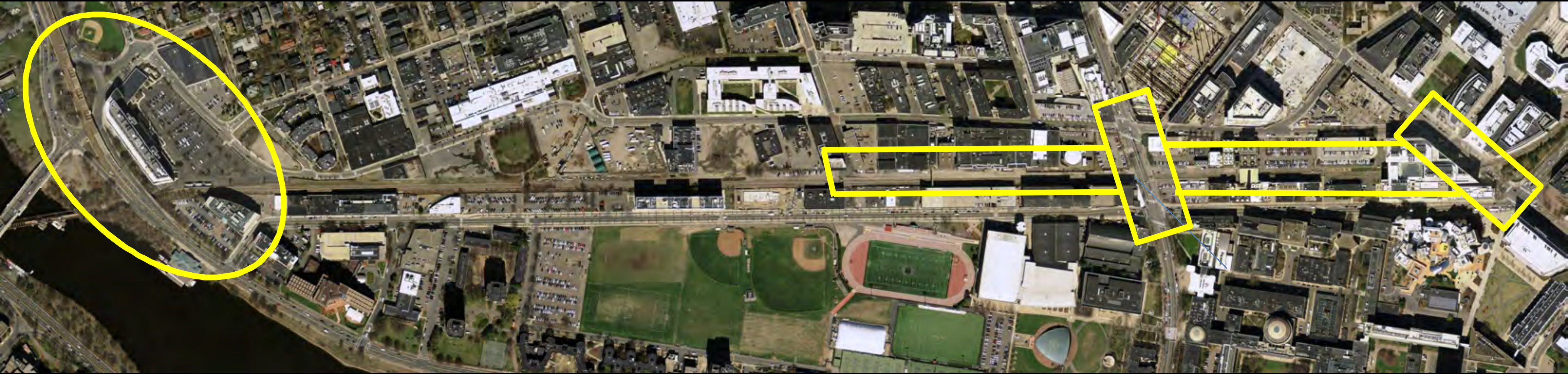
Focus Areas for Today



- East and West of Mass Ave
- Connections to the West
- Crossing Mass Ave and Main St

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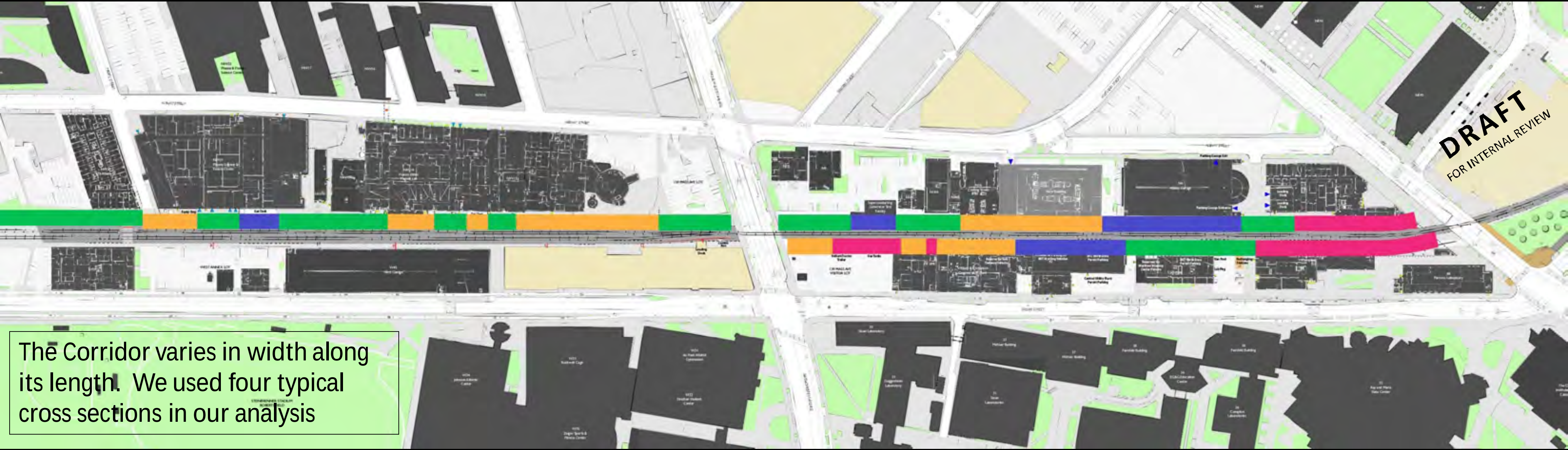
Corridor segmented by width



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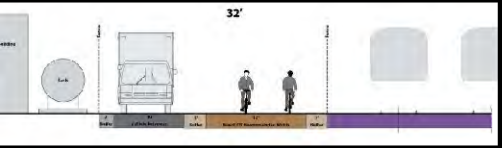
The Corridor varies in width along its length. We used four typical cross sections in our analysis

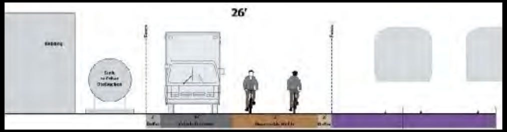
🟩

32’ or more



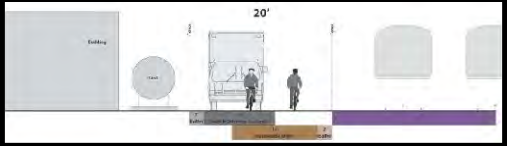
🟦

32’ - 26’



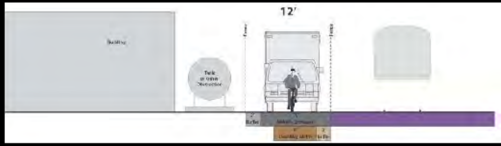
🟨

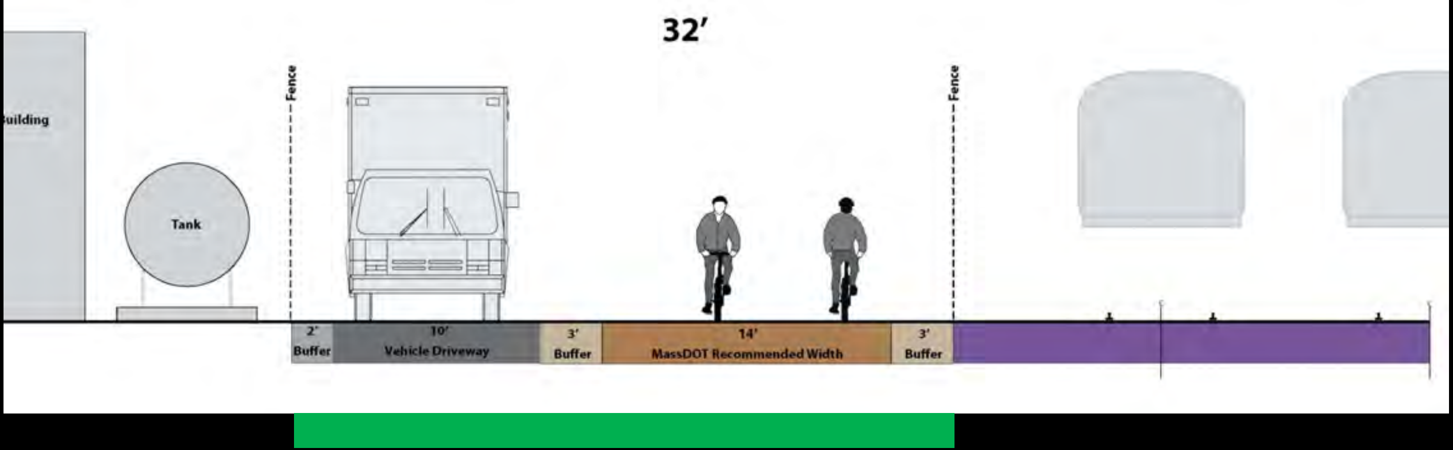
26’ - 20’



🟪

20’ or less




32’
uilding
Tank
Fence
Fence
2' Buffer
10' Vehicle Driveway
3' Buffer
14' MassDOT Recommended Width
3' Buffer

If we use the recommended MassDOT standard for multi-use paths, we need a combined width of 32 feet for a side-by-side multi-use path and service drive—including buffers. This amount of space is not available along much of the corridor.

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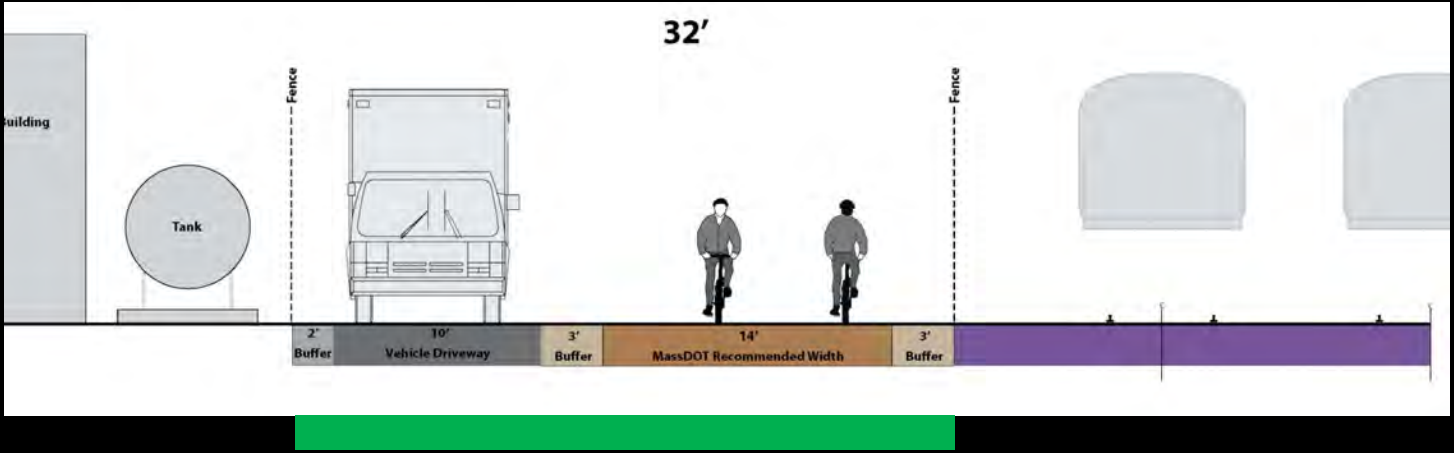
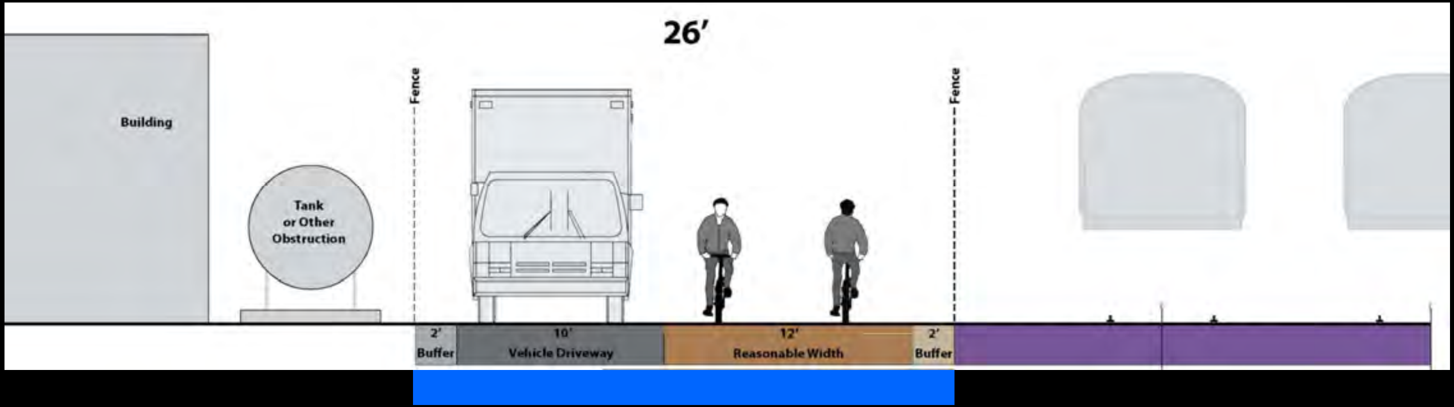
FOR INTERNAL REVIEW


32'
uilding
Tank
Fence
Fence
2' Buffer
10' Vehicle Driveway
3' Buffer
14' MassDOT Recommended Width
3' Buffer

A more practical dimension would be 26 feet which has a 12-foot rather than a 14-foot path and narrows or removes the buffer.


26'
Building
Tank or Other Obstruction
Fence
Fence
2' Buffer
10' Vehicle Driveway
12' Reasonable Width
2' Buffer

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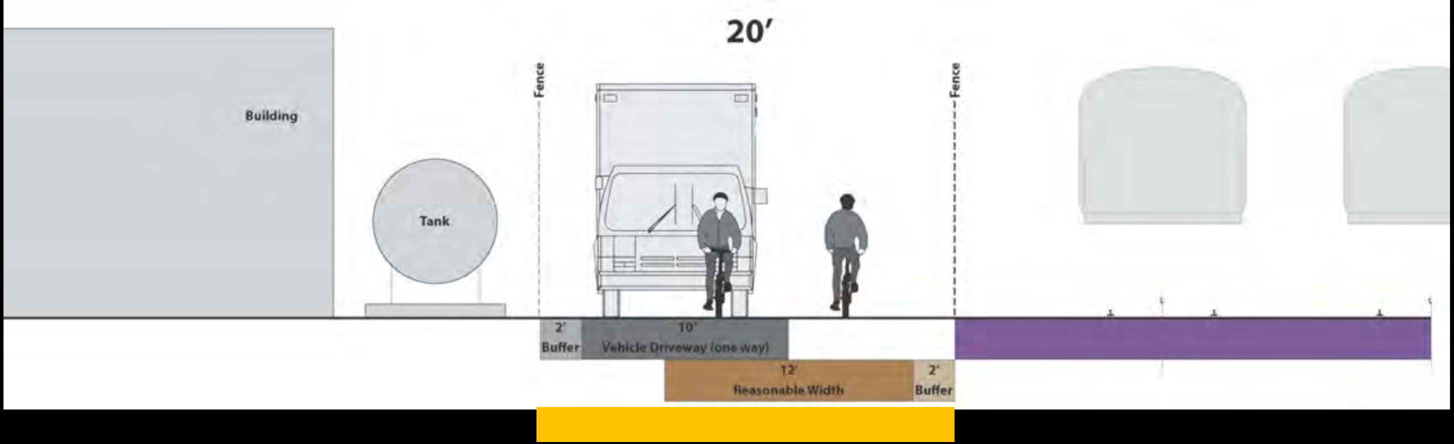
FOR INTERNAL REVIEW


20′
Building
Tank
Fence
Fence
2′
Buffer
10′
Vehicle Driveway (one way)
12′
Reasonable Width
2′
Buffer

Where 26 feet is not available, the service drive will overlap with the multi-use path. For an overlap of less than 6 feet the vehicles and path users move in the same direction. When the overlap is greater than 6 feet vehicles move against path users from the opposite direction.

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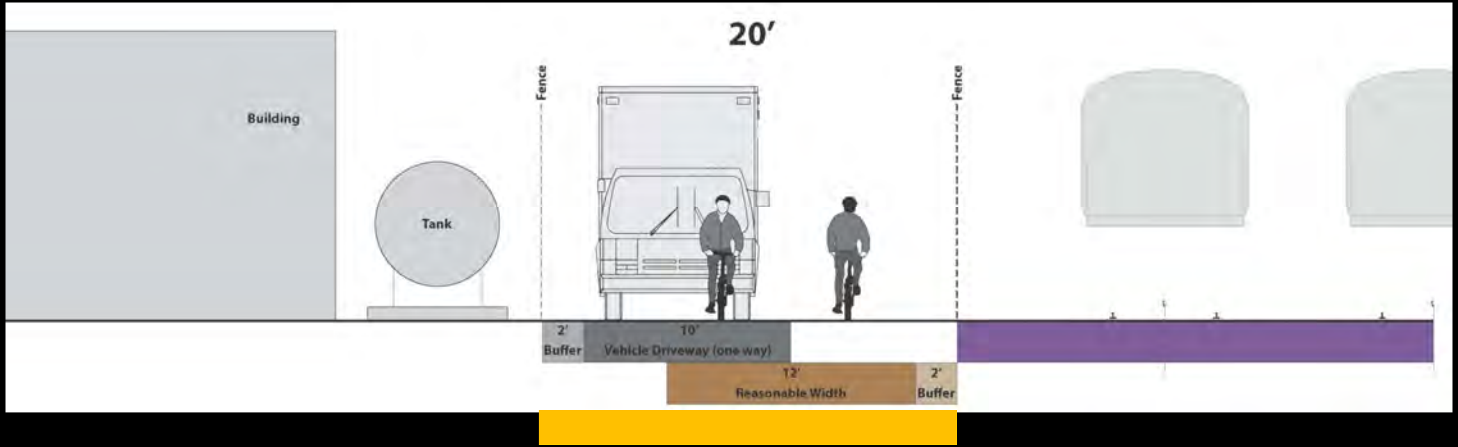
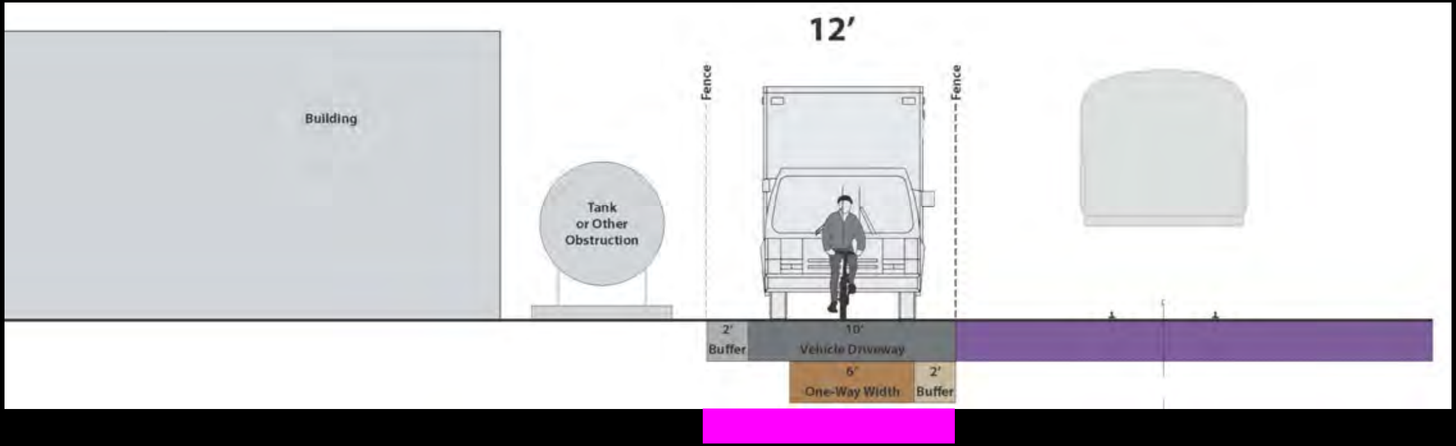
FOR INTERNAL REVIEW


20′
Building
Tank
Fence
Fence
2′
Buffer
10′
Vehicle Driveway (one way)
12′
Reasonable Width
2′
Buffer

The narrowest locations in the corridor are 12 feet and in these cases vehicles and path users share the same space. If a one-way path is used, vehicles and path users move in the same direction.


12′
Building
Tank
or Other
Obstruction
Fence
Fence
2′
Buffer
10′
Vehicle Driveway
6′
One-Way Width
2′
Buffer

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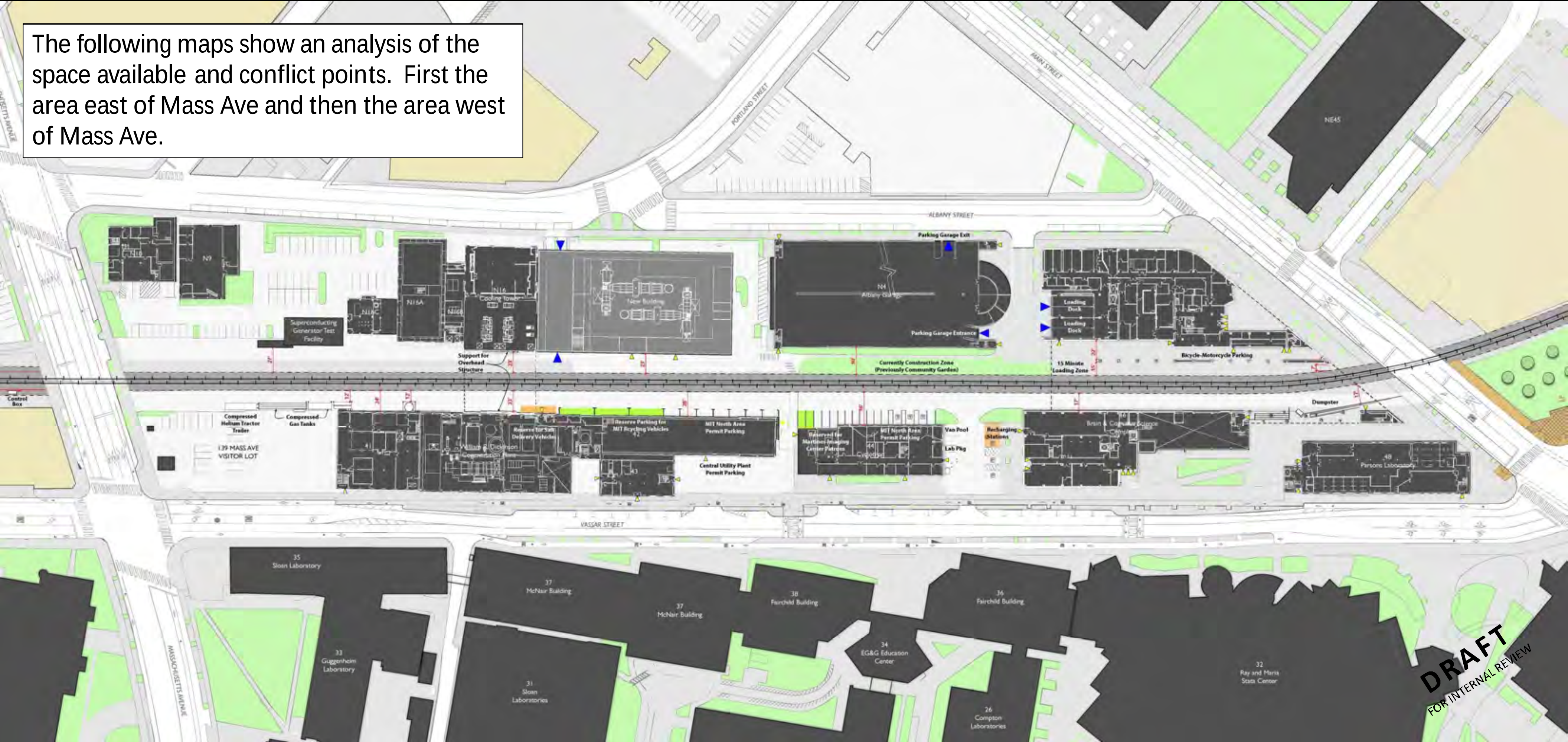
FOR INTERNAL REVIEW

The following maps show an analysis of the space available and conflict points. First the area east of Mass Ave and then the area west of Mass Ave.


PORTLAND STREET
MAIN STREET
NE45
ALBANY STREET
N9
N10
N16
Cooling Tower
N16A
N16B
N16C
Superconducting Generator Test Facility
New Building
N4
Albany Garage
Parking Garage Exit
Parking Garage Entrance
Loading Dock
Loading Dock
Support for Overhead Structure
Currently Construction Zone (Previously Community Garden)
15 Minute Loading Zone
Bicycle-Motorcycle Parking
Control Box
Compressed Helium Tractor Trailer
Compressed Gas Tanks
139 MASS AVE VISITOR LOT
41
William & Dickinson Cogeneration Plant
Reserve for Safe Delivery Vehicles
Reserve Parking for MIT Recycling Vehicles
42
MIT North Area Permit Parking
43
Central Utility Plant Permit Parking
Reserved for Martinos Imaging Center Patrons
MIT North Area Permit Parking
44
Cyclotron
Van Pool
Lab Pkg
Recharging Stations
Brain & Cognitive Science Complex
Dumpster
48
Parsons Laboratory
VASSAR STREET
MASSACHUSETTS AVENUE
35
Sloan Laboratory
37
McNair Building
37
McNair Building
38
Fairchild Building
36
Fairchild Building
34
EG&G Education Center
33
Guggenheim Laboratory
31
Sloan Laboratories
26
Compton Laboratories
32
Ray and Maria Stata Center

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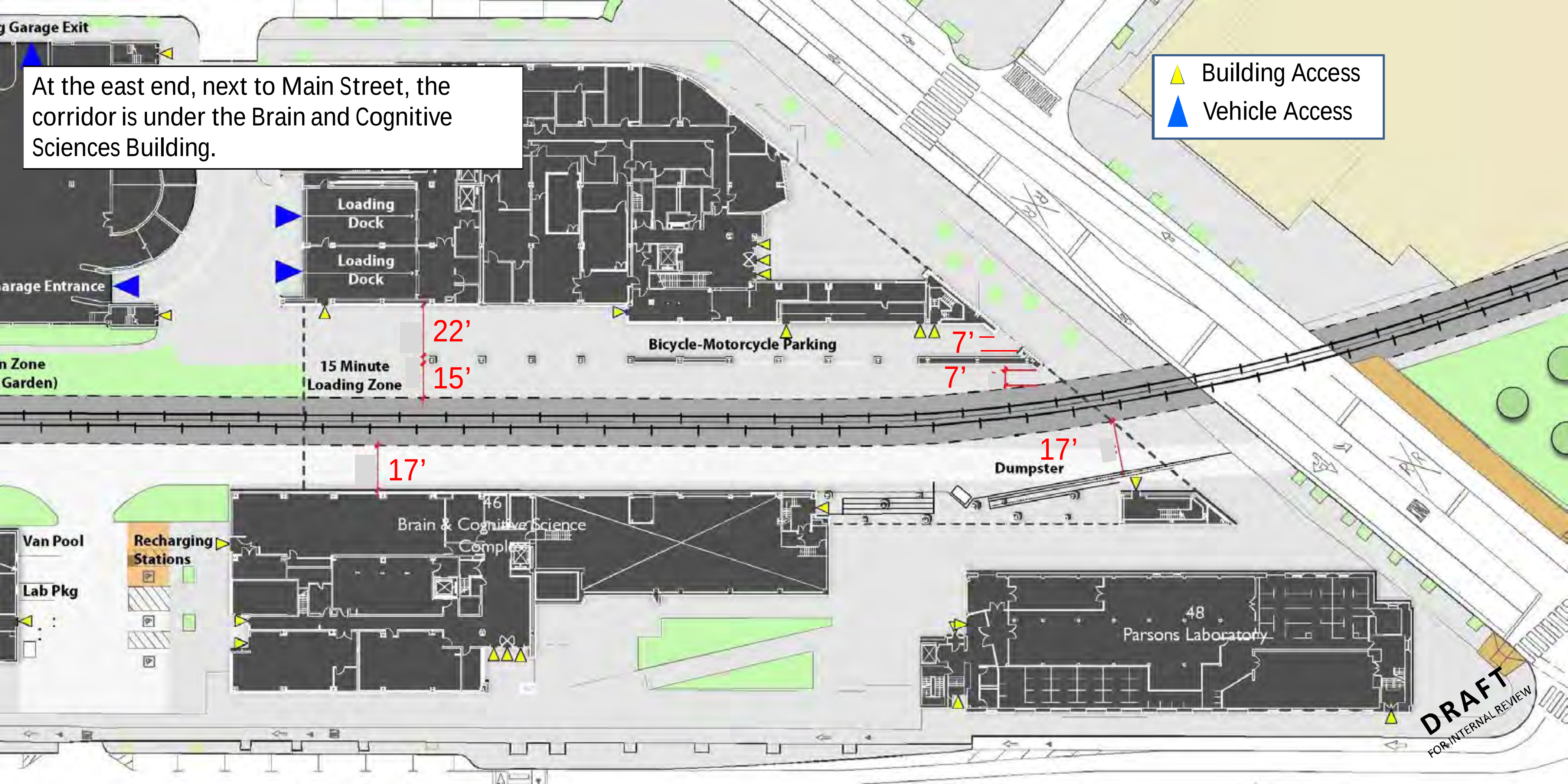
FOR INTERNAL REVIEW

At the east end, next to Main Street, the corridor is under the Brain and Cognitive Sciences Building.


Garage Exit
Loading Dock
Loading Dock
arage Entrance
22’
15’
15 Minute Loading Zone
n Zone
Garden)
Bicycle-Motorcycle Parking
7’
7’
17’
17’
Dumpster
46
Brain & Cognitive Science Complex
Van Pool
Lab Pkg
Recharging Stations
48
Parsons Laboratory

△ Building Access
▲ Vehicle Access

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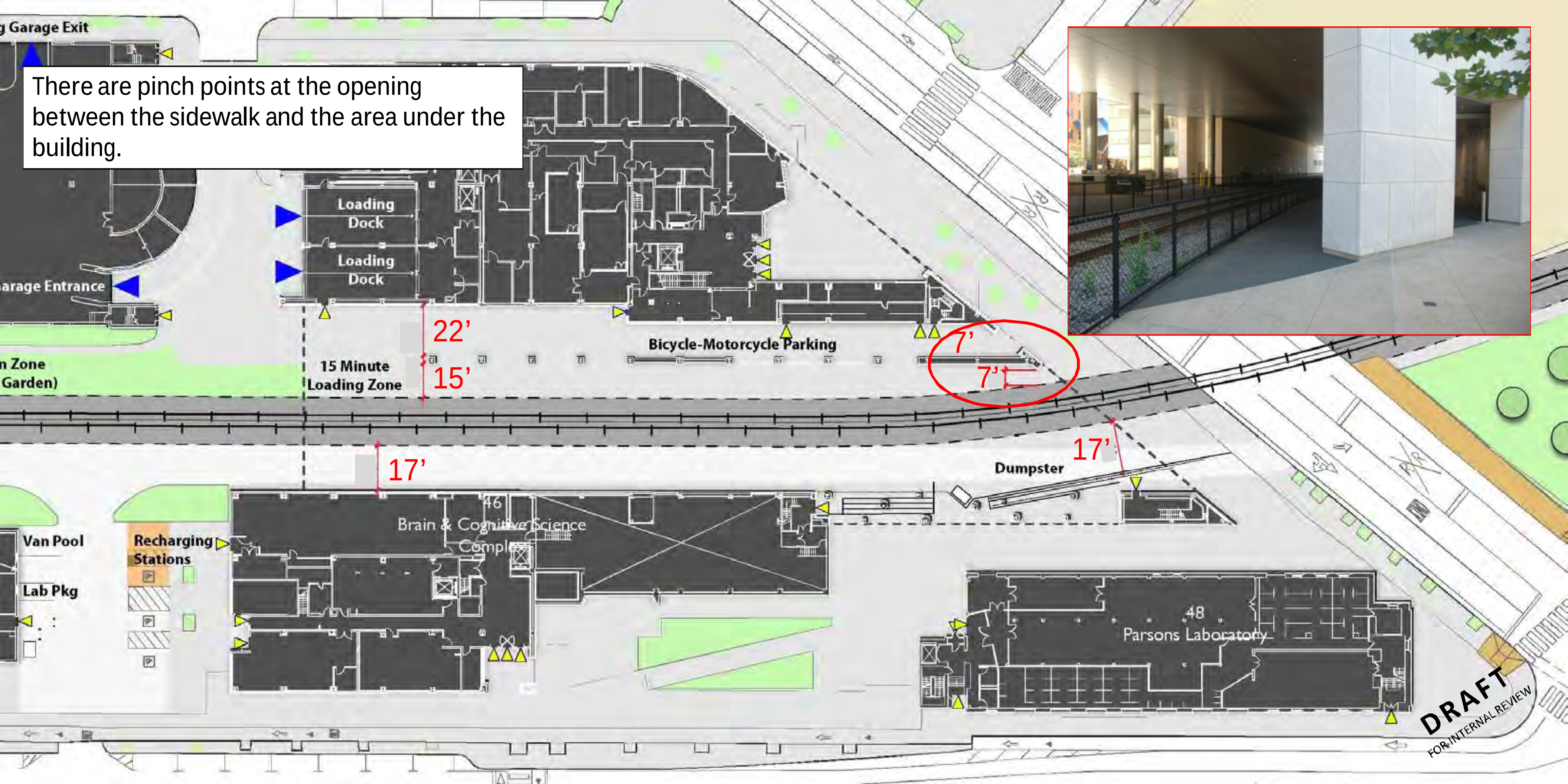
FOR INTERNAL REVIEW



There are pinch points at the opening between the sidewalk and the area under the building.

g Garage Exit
Loading Dock
Loading Dock
arage Entrance
22'
15'
15 Minute Loading Zone
n Zone
Garden)
Bicycle-Motorcycle Parking
7'
7'
17'
17'
Dumpster
46
Brain & Cognitive Science Complex
Van Pool
Recharging Stations
Lab Pkg
48
Parsons Laboratory

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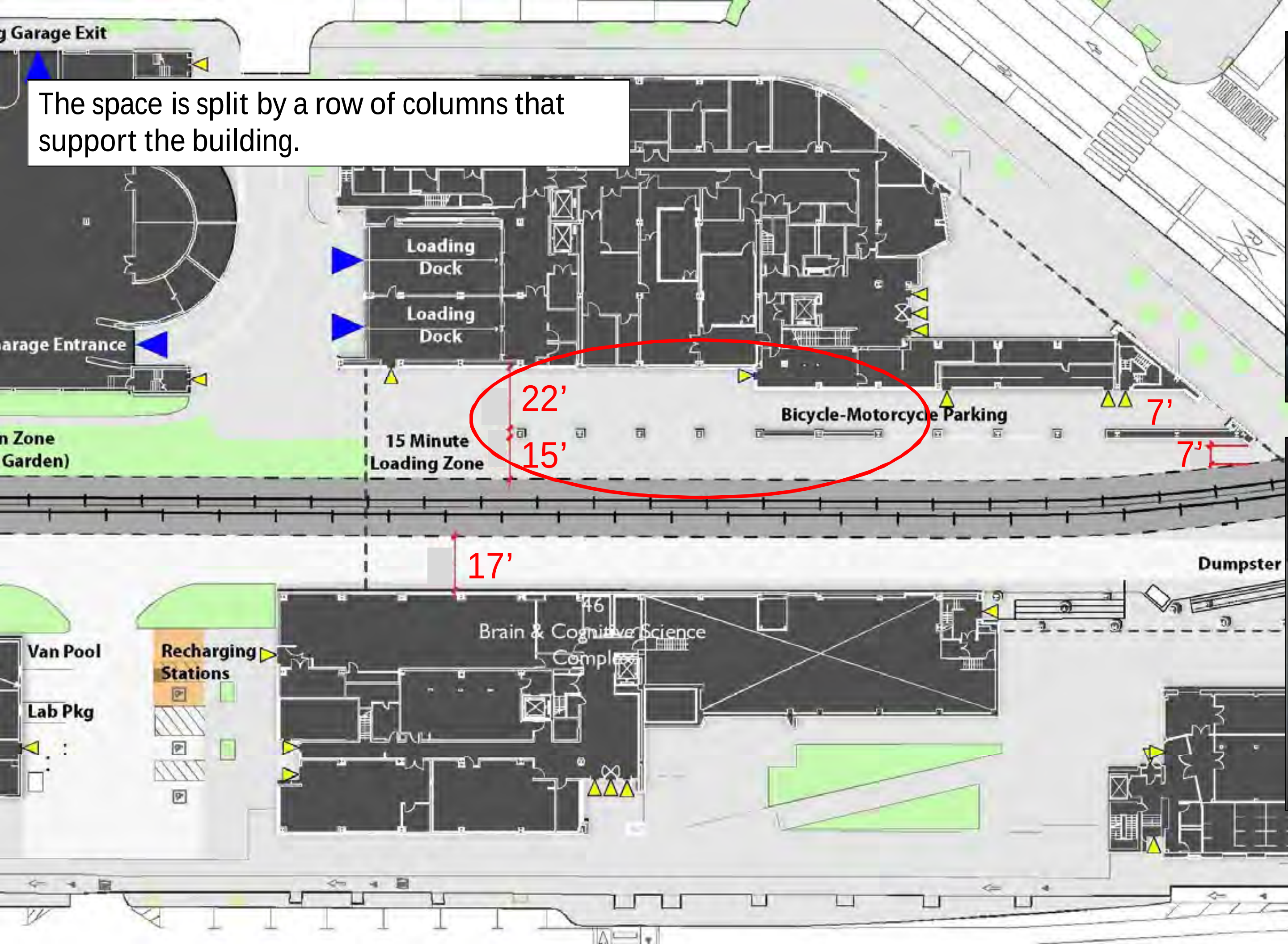
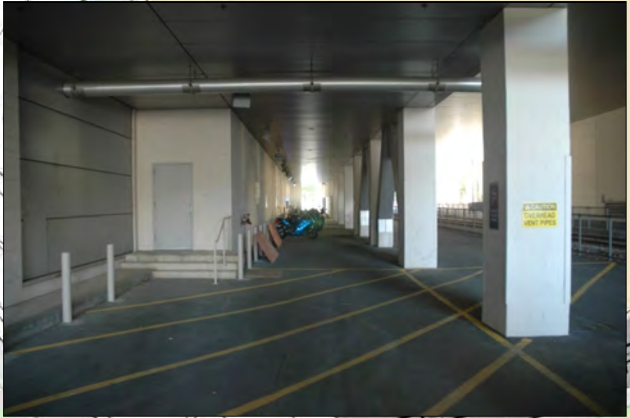
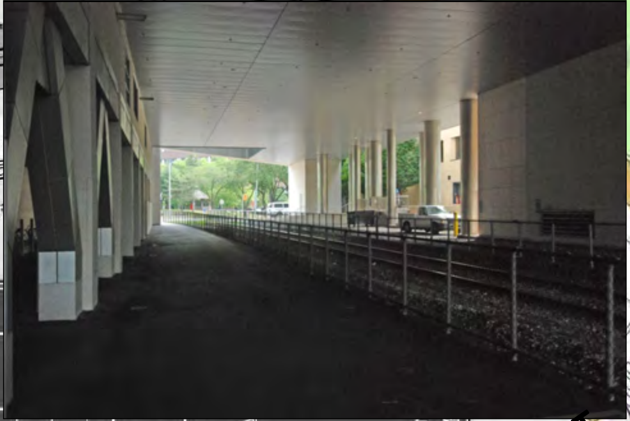
FOR INTERNAL REVIEW

The space is split by a row of columns that support the building.


g Garage Exit
Loading Dock
Loading Dock
arage Entrance
n Zone
Garden)
15 Minute
Loading Zone
22’
15’
Bicycle-Motorcycle Parking
7’
7’
17’
Dumpster
Van Pool
Recharging
Stations
Lab Pkg
46
Brain & Cognitive Science
Complex





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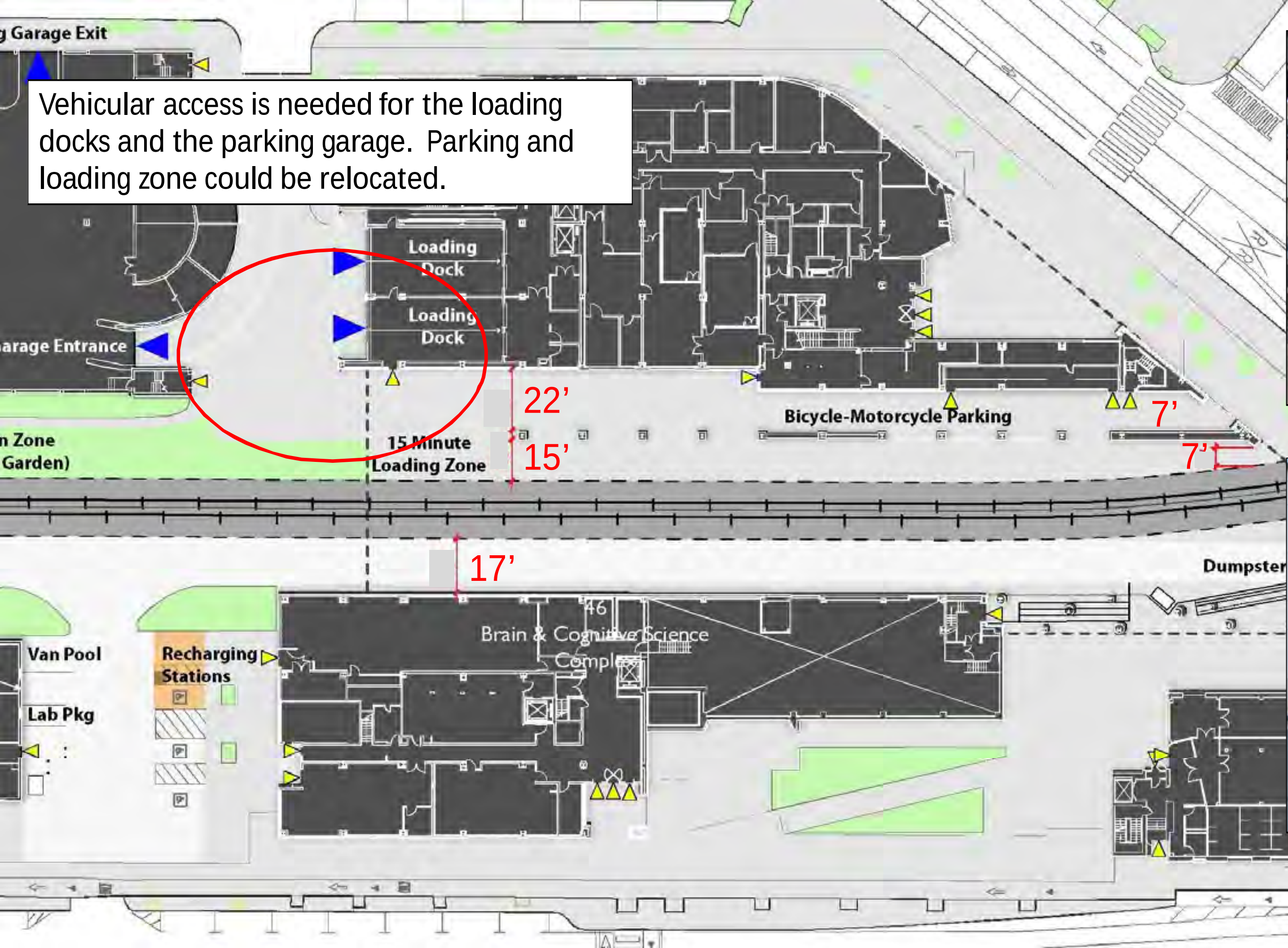
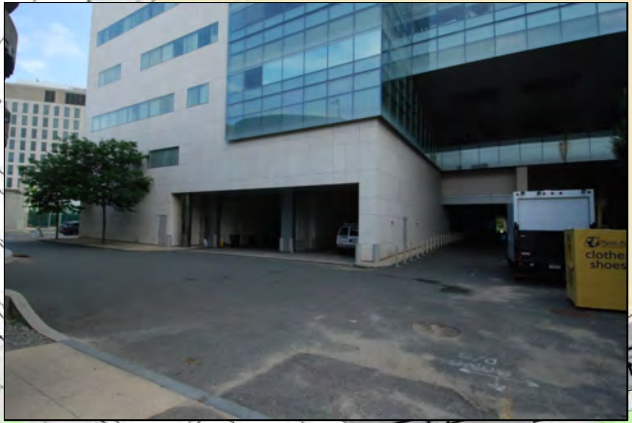
FOR INTERNAL REVIEW

Vehicular access is needed for the loading docks and the parking garage. Parking and loading zone could be relocated.


Garage Exit
Loading Dock
Loading Dock
arage Entrance
n Zone
Garden)
15 Minute
Loading Zone
22'
15'
Bicycle-Motorcycle Parking
7'
7'
17'
Dumpster
Van Pool
Recharging
Stations
Lab Pkg
46
Brain & Cognitive Science
Complex



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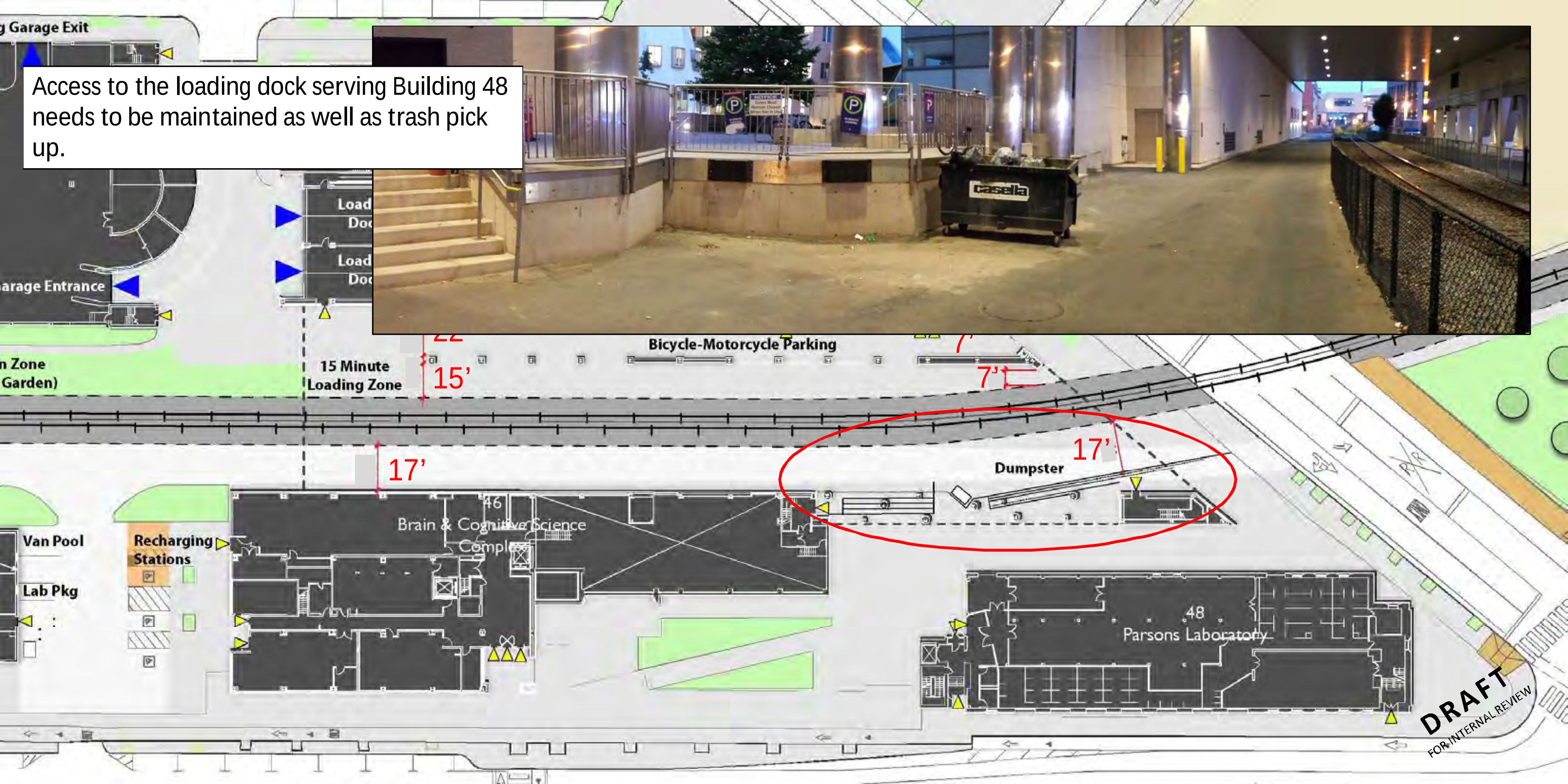
Access to the loading dock serving Building 48 needs to be maintained as well as trash pick up.


g Garage Exit
Load
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arage Entrance
n Zone
Garden)
15 Minute
Loading Zone
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15'
Bicycle-Motorcycle Parking
7'
7'
17'
17'
Dumpster
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Brain & Cognitive Science
Complex
Van Pool
Recharging
Stations
Lab Pkg
48
Parsons Laboratory
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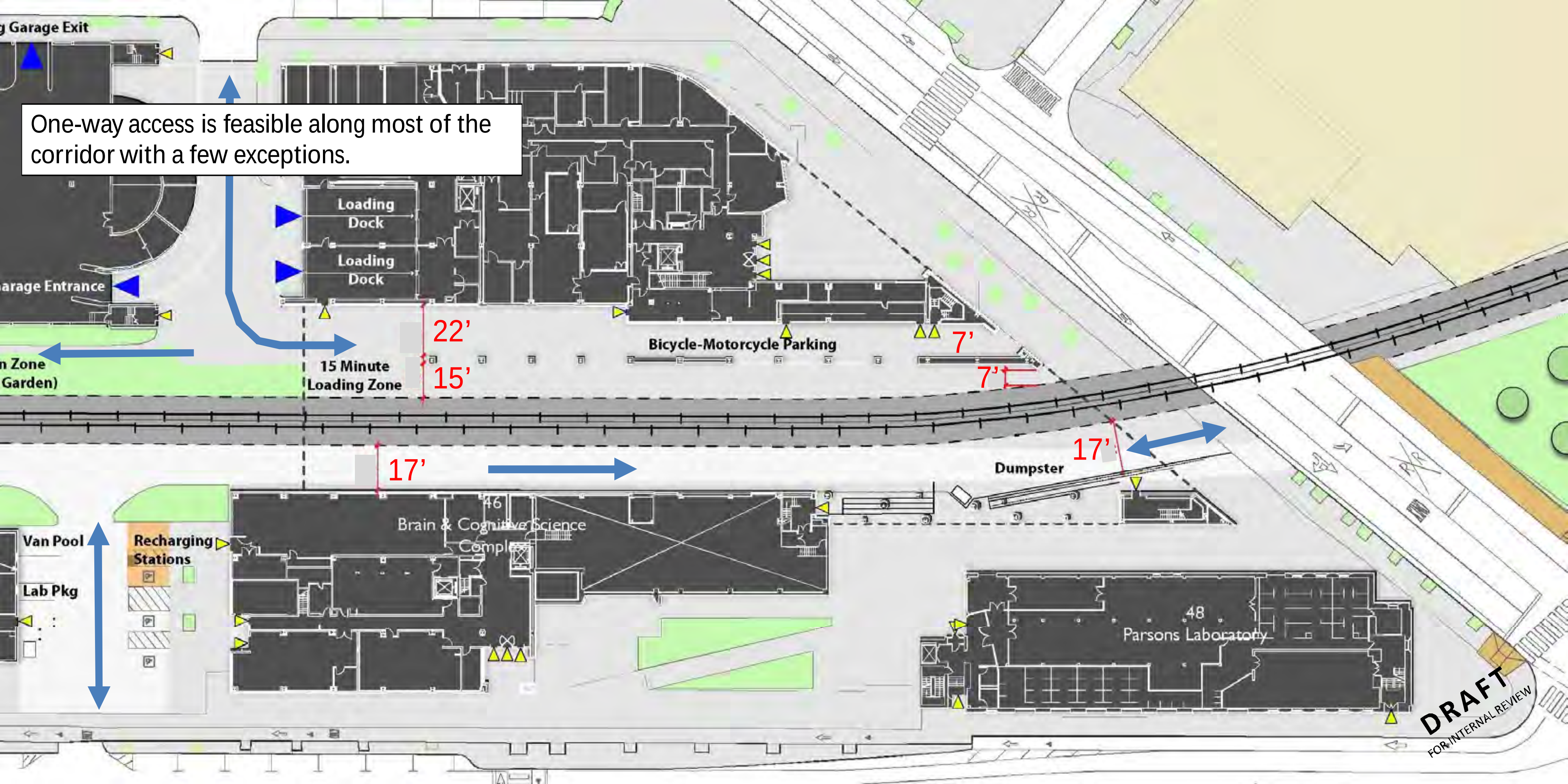
FOR INTERNAL REVIEW



One-way access is feasible along most of the corridor with a few exceptions.

g Garage Exit
Loading Dock
Loading Dock
arage Entrance
n Zone
Garden)
22’
15’
15 Minute Loading Zone
Bicycle-Motorcycle Parking
7’
7’
17’
17’
Dumpster
46
Brain & Cognitive Science Complex
Van Pool
Lab Pkg
Recharging Stations
48
Parsons Laboratory

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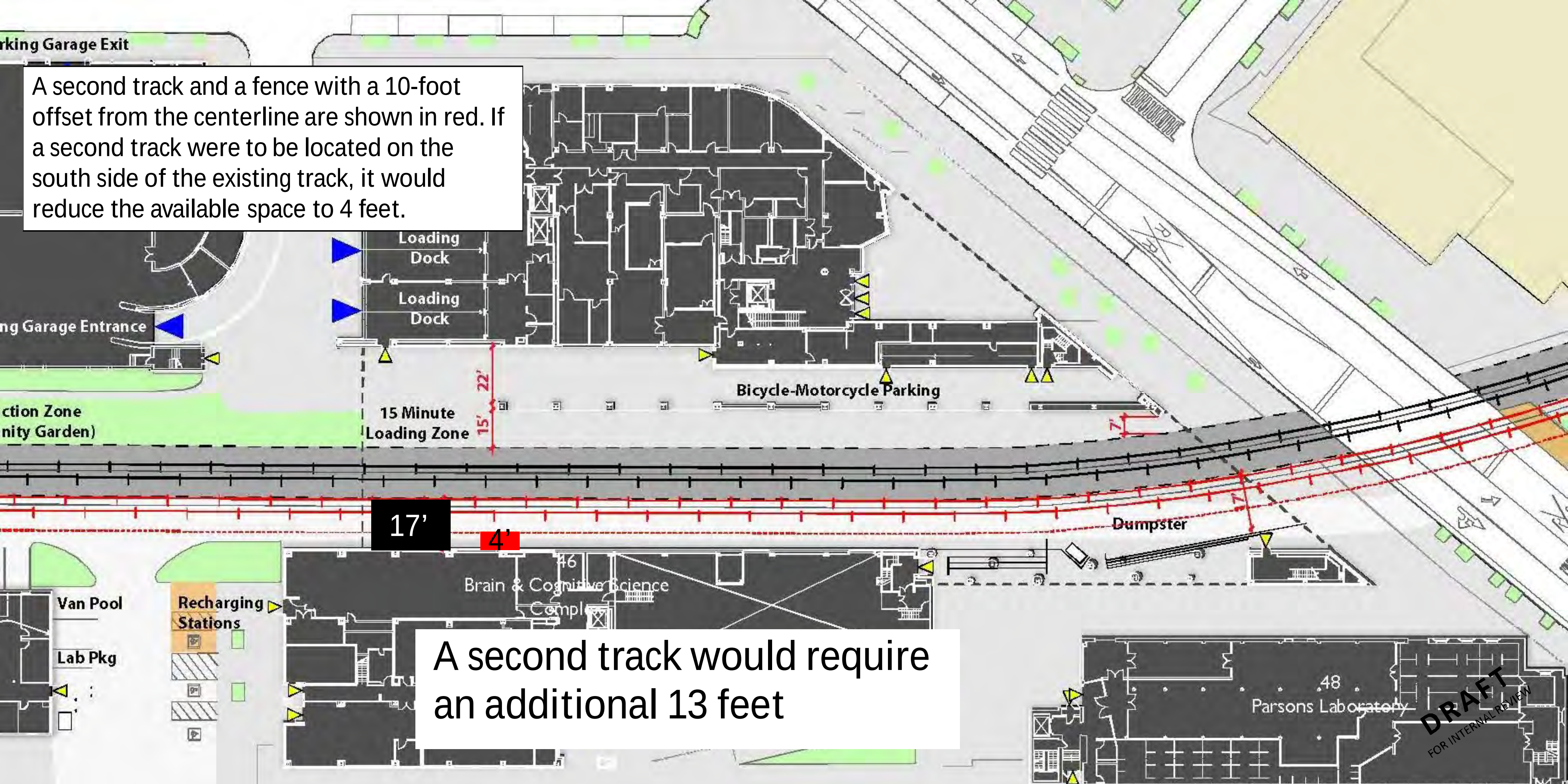
FOR INTERNAL REVIEW



A second track and a fence with a 10-foot offset from the centerline are shown in red. If a second track were to be located on the south side of the existing track, it would reduce the available space to 4 feet.

A second track would require an additional 13 feet

rking Garage Exit
Loading Dock
Loading Dock
ng Garage Entrance
ction Zone
nity Garden)
15 Minute Loading Zone
22'
15'
Bicycle-Motorcycle Parking
7'
17'
4'
7'
Dumpster
46
Brain & Cognitive Science Complex
Van Pool
Recharging Stations
Lab Pkg
48
Parsons Laboratory

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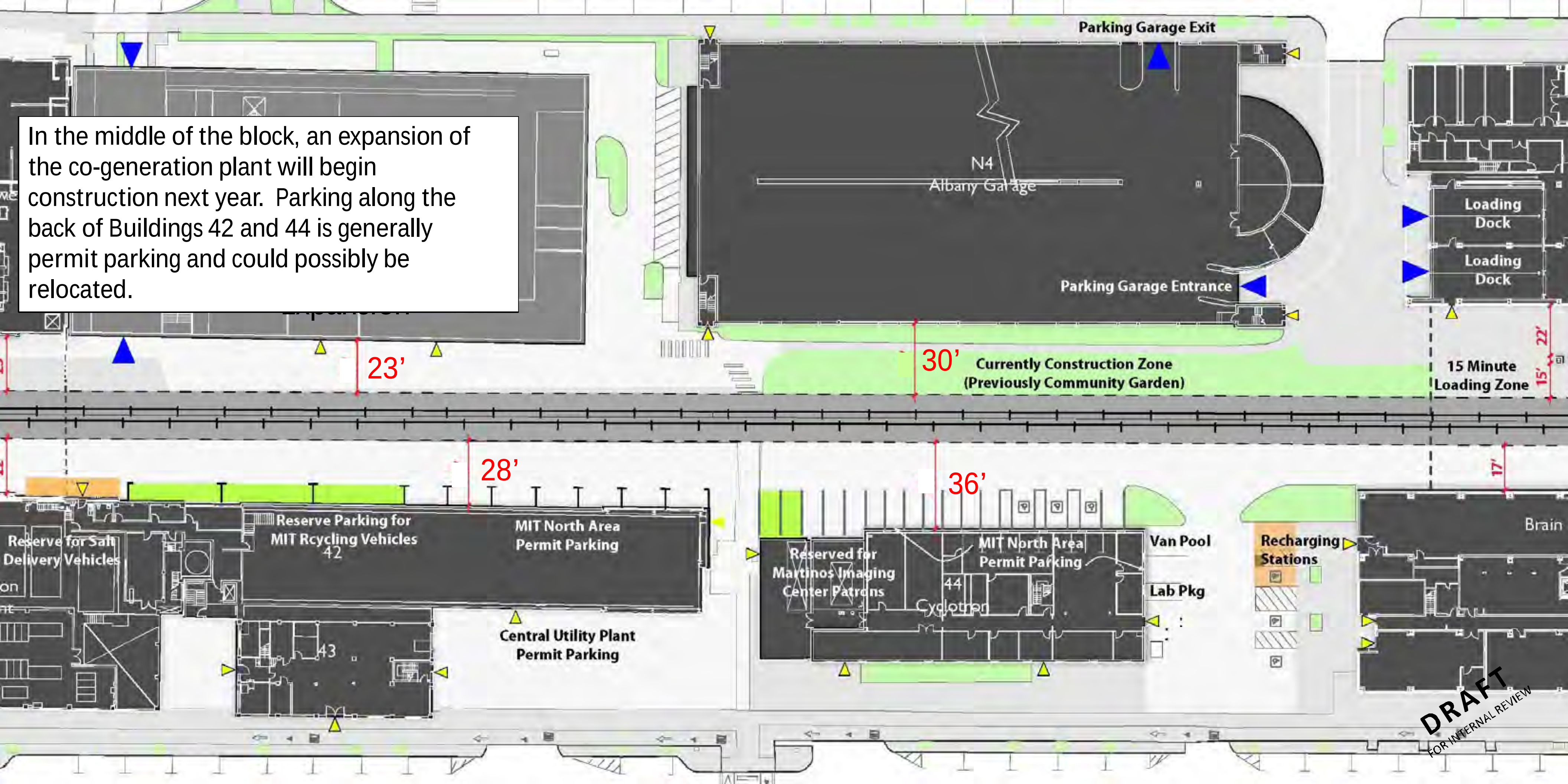
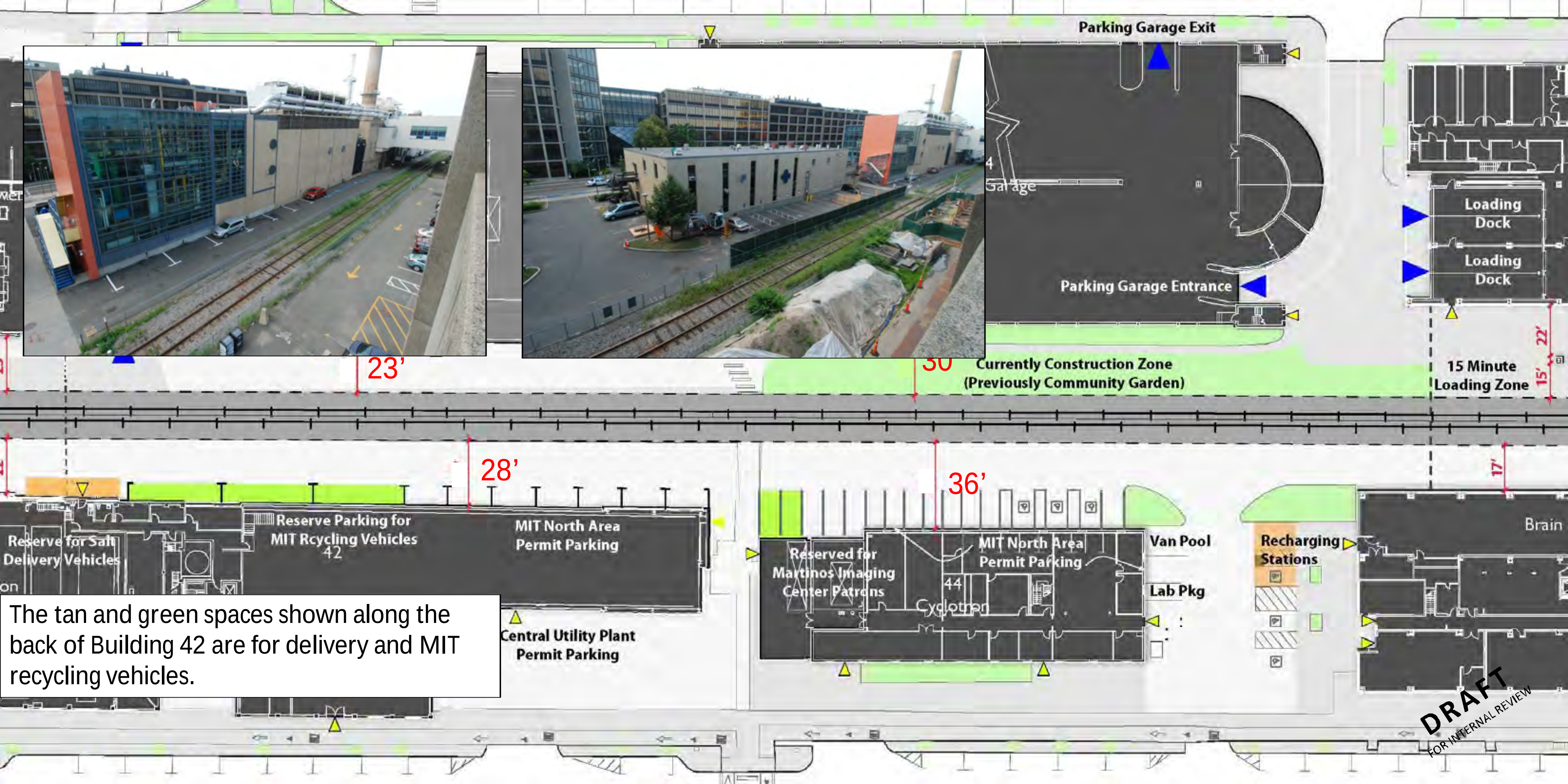
In the middle of the block, an expansion of the co-generation plant will begin construction next year. Parking along the back of Buildings 42 and 44 is generally permit parking and could possibly be relocated.


Parking Garage Exit
N4
Albany Garage
Parking Garage Entrance
Loading Dock
Loading Dock
22'
15'
15 Minute Loading Zone
Expansion
23'
30'
Currently Construction Zone
(Previously Community Garden)
28'
36'
17'
Reserve for Salt Delivery Vehicles
Reserve Parking for MIT Rcycling Vehicles
42
MIT North Area Permit Parking
Central Utility Plant Permit Parking
43
Reserved for Martinos Imaging Center Patrons
MIT North Area Permit Parking
44
Cyclotron
Van Pool
Lab Pkg
Recharging Stations
Brain
DRAFT
FOR INTERNAL REVIEW


Parking Garage Exit
Garage
Loading Dock
Loading Dock
Parking Garage Entrance
23’
30’
Currently Construction Zone
(Previously Community Garden)
15 Minute Loading Zone
22’
15’
28’
36’
17’
Reserve for Salt Delivery Vehicles
Reserve Parking for MIT Rcycling Vehicles
42
MIT North Area Permit Parking
Central Utility Plant Permit Parking
Reserved for Martinos Imaging Center Patrons
MIT North Area Permit Parking
44
Cyclotron
Van Pool
Lab Pkg
Recharging Stations
Brain

The tan and green spaces shown along the back of Building 42 are for delivery and MIT recycling vehicles.

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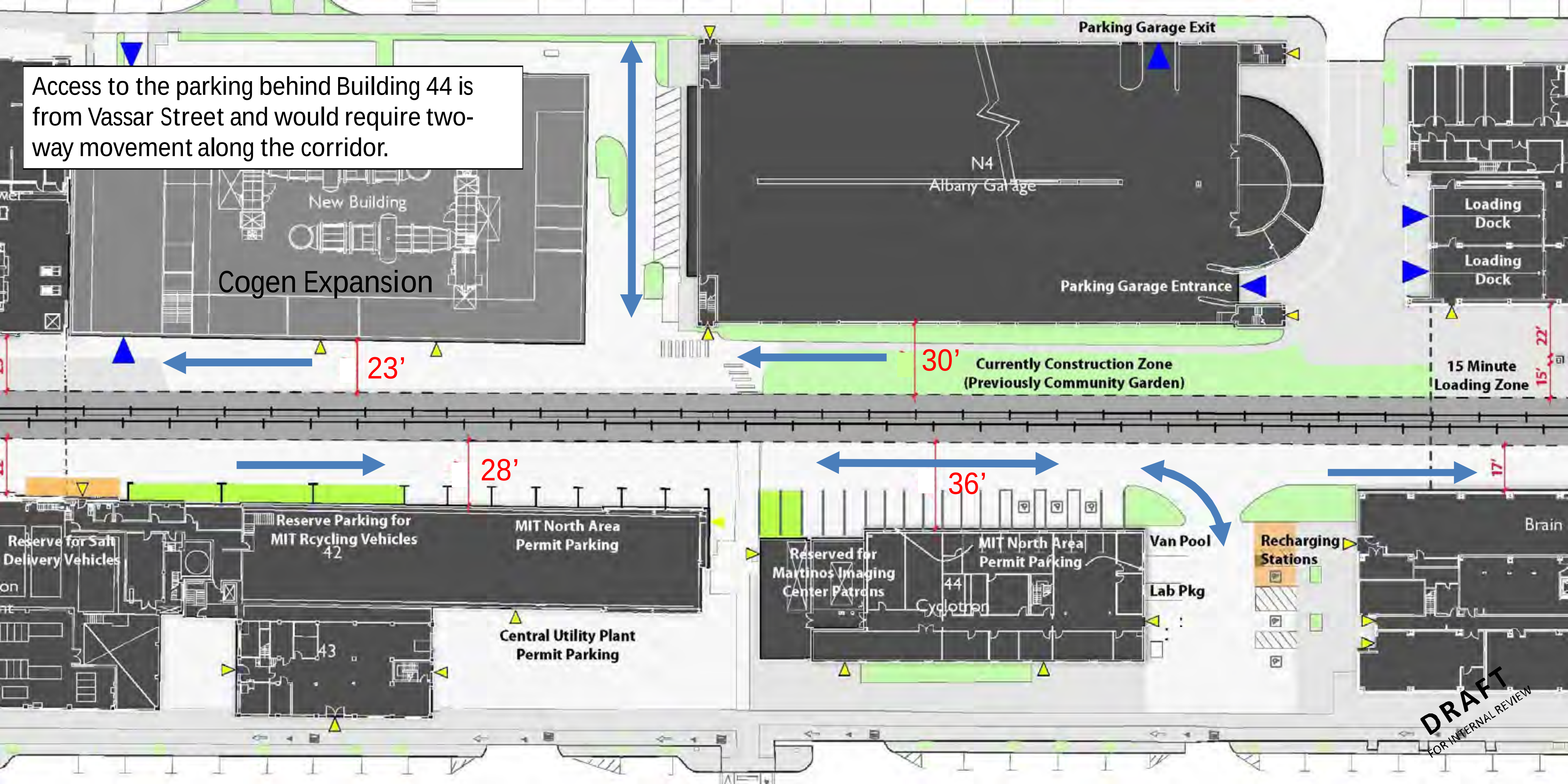

Access to the parking behind Building 44 is from Vassar Street and would require two-way movement along the corridor.

Parking Garage Exit
N4
Albany Garage
New Building
Cogen Expansion
Loading Dock
Loading Dock
Parking Garage Entrance
23’
30’
Currently Construction Zone
(Previously Community Garden)
15 Minute Loading Zone
22’
15’
28’
36’
17’
Reserve for Safe Delivery Vehicles
Reserve Parking for MIT Rcycling Vehicles
42
MIT North Area Permit Parking
Reserved for Martinos Imaging Center Patrons
44
Cyclotron
MIT North Area Permit Parking
Van Pool
Lab Pkg
Recharging Stations
Brain
43
Central Utility Plant Permit Parking

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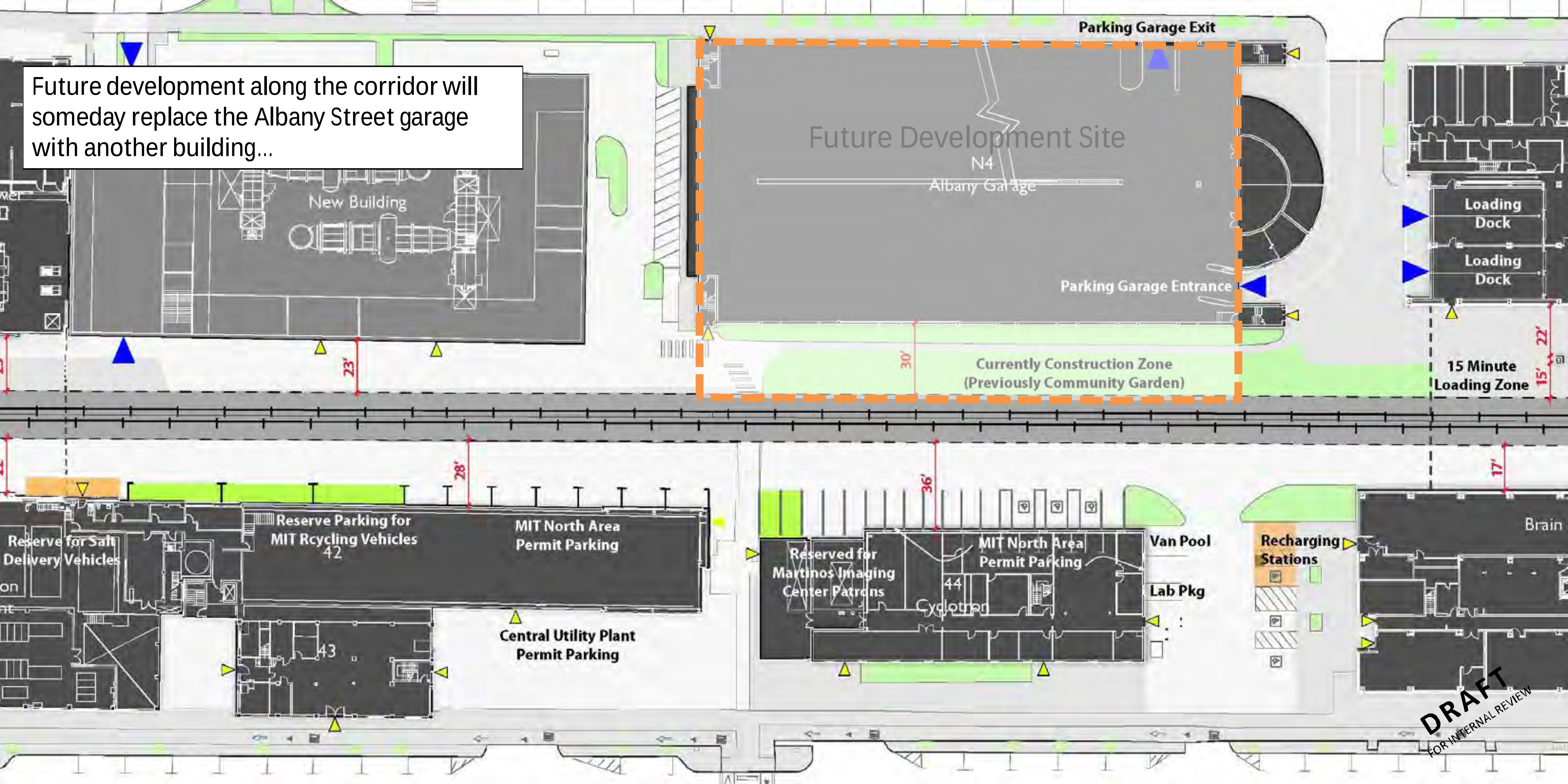
FOR INTERNAL REVIEW



Future development along the corridor will someday replace the Albany Street garage with another building...

Parking Garage Exit
Future Development Site
N4
Albany Garage
New Building
Parking Garage Entrance
Loading Dock
Loading Dock
15 Minute Loading Zone
22'
15'
23'
30'
Currently Construction Zone (Previously Community Garden)
28'
36'
17'
Reserve for Salt Delivery Vehicles
Reserve Parking for MIT Rcycling Vehicles
42
MIT North Area Permit Parking
43
Central Utility Plant Permit Parking
Reserved for Martinos Imaging Center Patrons
MIT North Area Permit Parking
44
Cyclotron
Van Pool
Lab Pkg
Recharging Stations
Brain

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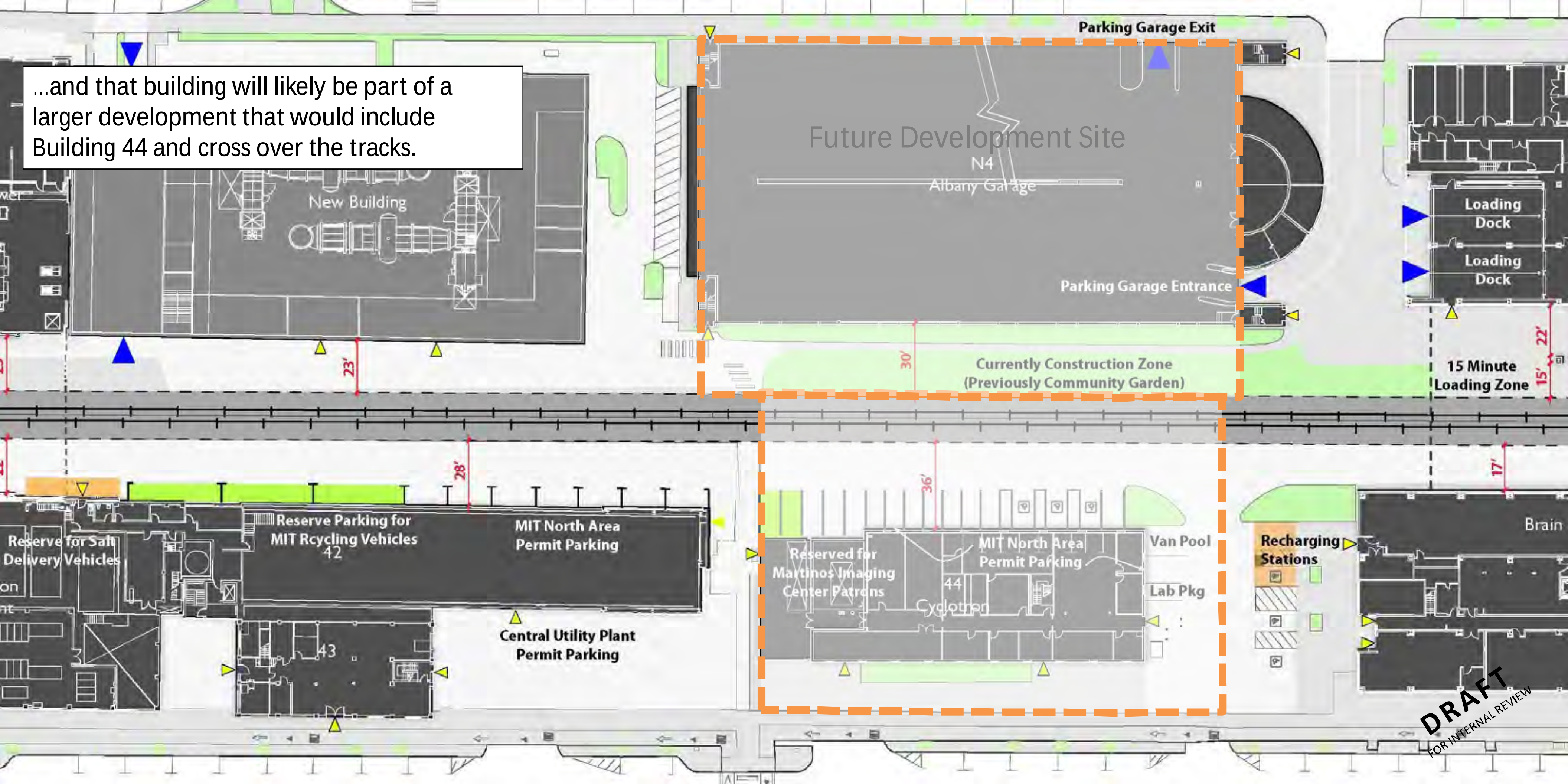
FOR INTERNAL REVIEW



...and that building will likely be part of a larger development that would include Building 44 and cross over the tracks.

Parking Garage Exit
Future Development Site
N4
Albany Garage
New Building
Loading Dock
Loading Dock
Parking Garage Entrance
23'
30'
Currently Construction Zone
(Previously Community Garden)
15 Minute Loading Zone
22'
15'
28'
36'
17'
Reserve for Salt Delivery Vehicles
Reserve Parking for MIT Rcycling Vehicles
42
MIT North Area Permit Parking
Central Utility Plant Permit Parking
43
Reserved for Martinos Imaging Center Patrons
MIT North Area Permit Parking
44
Cyclotron
Van Pool
Lab Pkg
Recharging Stations
Brain

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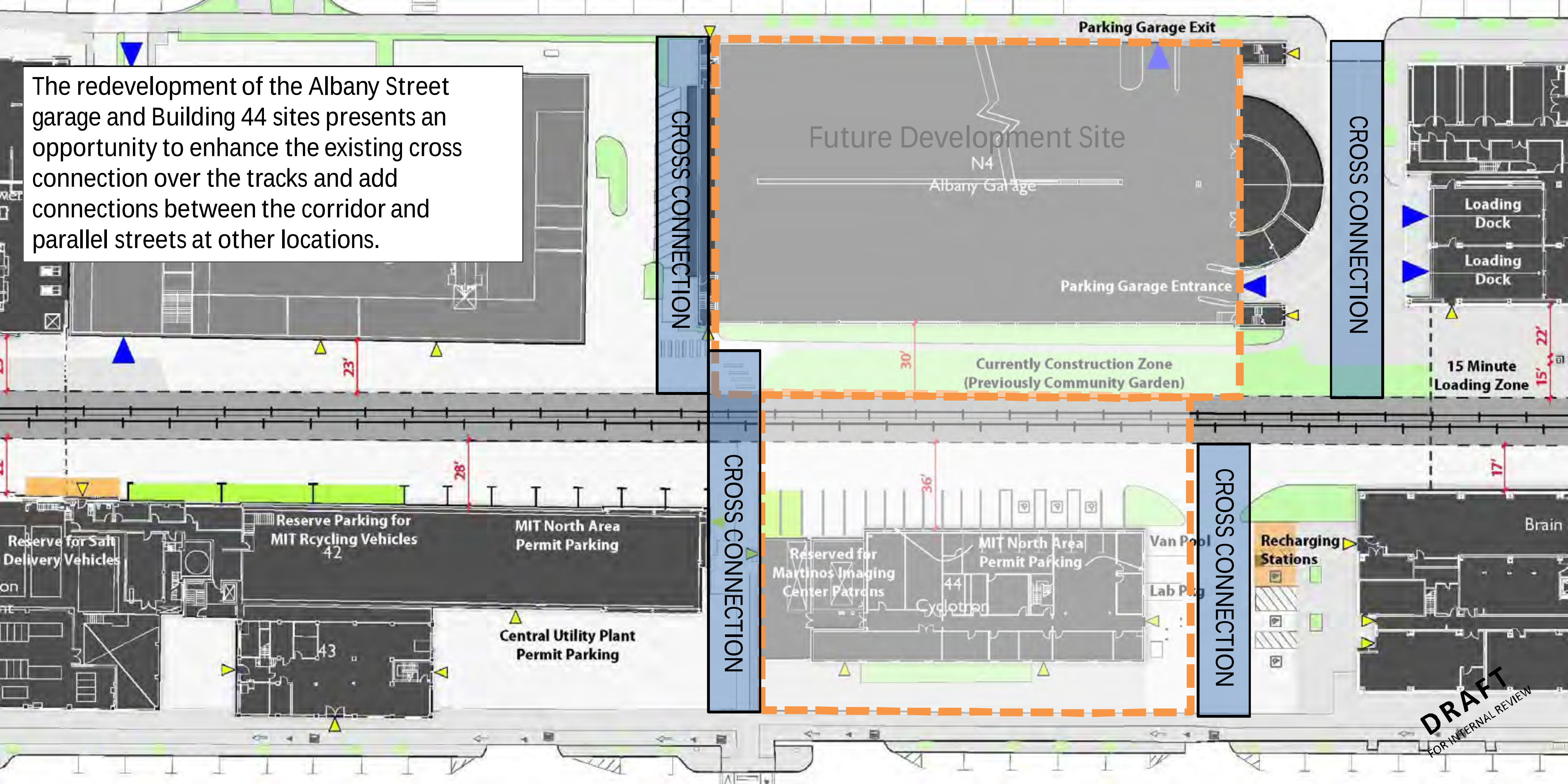
FOR INTERNAL REVIEW



The redevelopment of the Albany Street garage and Building 44 sites presents an opportunity to enhance the existing cross connection over the tracks and add connections between the corridor and parallel streets at other locations.

Parking Garage Exit
CROSS CONNECTION
Future Development Site
N4
Albany Garage
Parking Garage Entrance
CROSS CONNECTION
Loading Dock
Loading Dock
22'
15'
15 Minute Loading Zone
30'
Currently Construction Zone
(Previously Community Garden)
23'
28'
36'
17'
CROSS CONNECTION
CROSS CONNECTION
Reserve Parking for MIT Rcycling Vehicles
42
MIT North Area Permit Parking
Reserve for Salt Delivery Vehicles
Central Utility Plant Permit Parking
43
Reserved for Martinos Imaging Center Patrons
MIT North Area Permit Parking
44
Cyclotron
Van Pool
Lab Pkg
Recharging Stations
Brain

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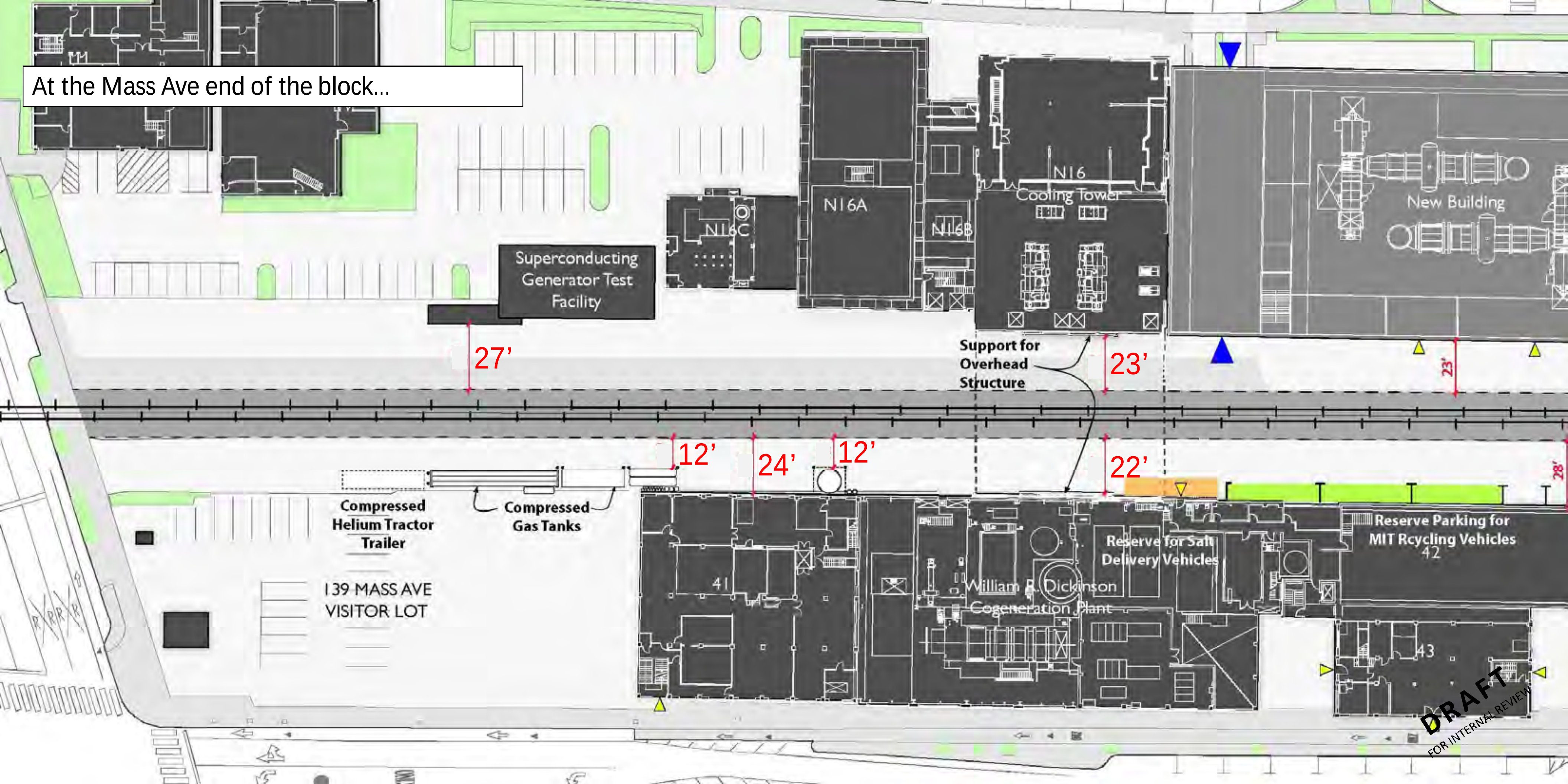
FOR INTERNAL REVIEW

At the Mass Ave end of the block…


N16C
N16A
N16B
N16
Cooling Tower
New Building
Superconducting Generator Test Facility
27’
Support for Overhead Structure
23’
23’
12’
24’
12’
22’
28’
Compressed Helium Tractor Trailer
Compressed Gas Tanks
139 MASS AVE VISITOR LOT
41
William R. Dickinson Cogeneration Plant
Reserve for Salt Delivery Vehicles
Reserve Parking for MIT Rcycling Vehicles
42
43

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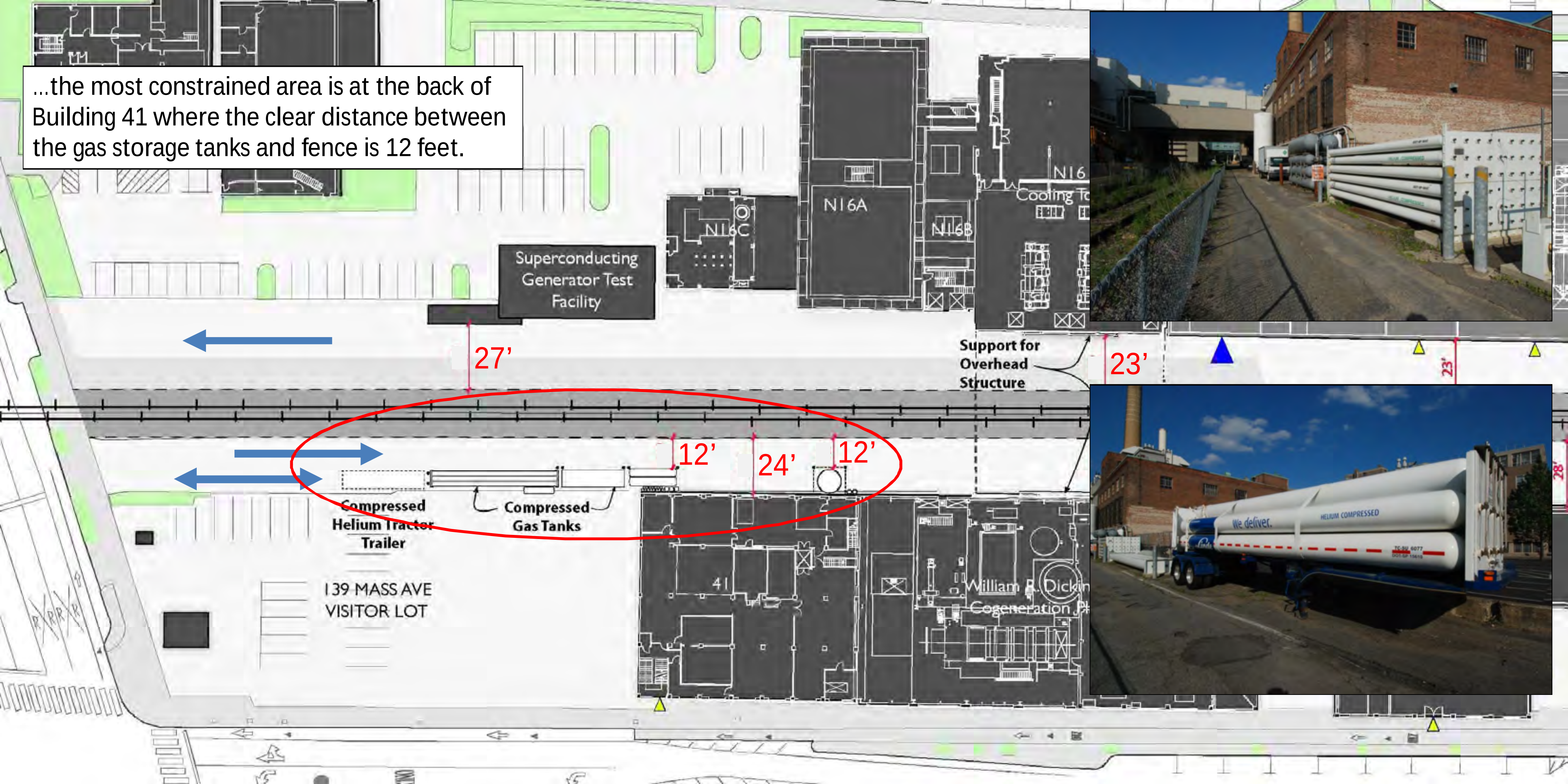
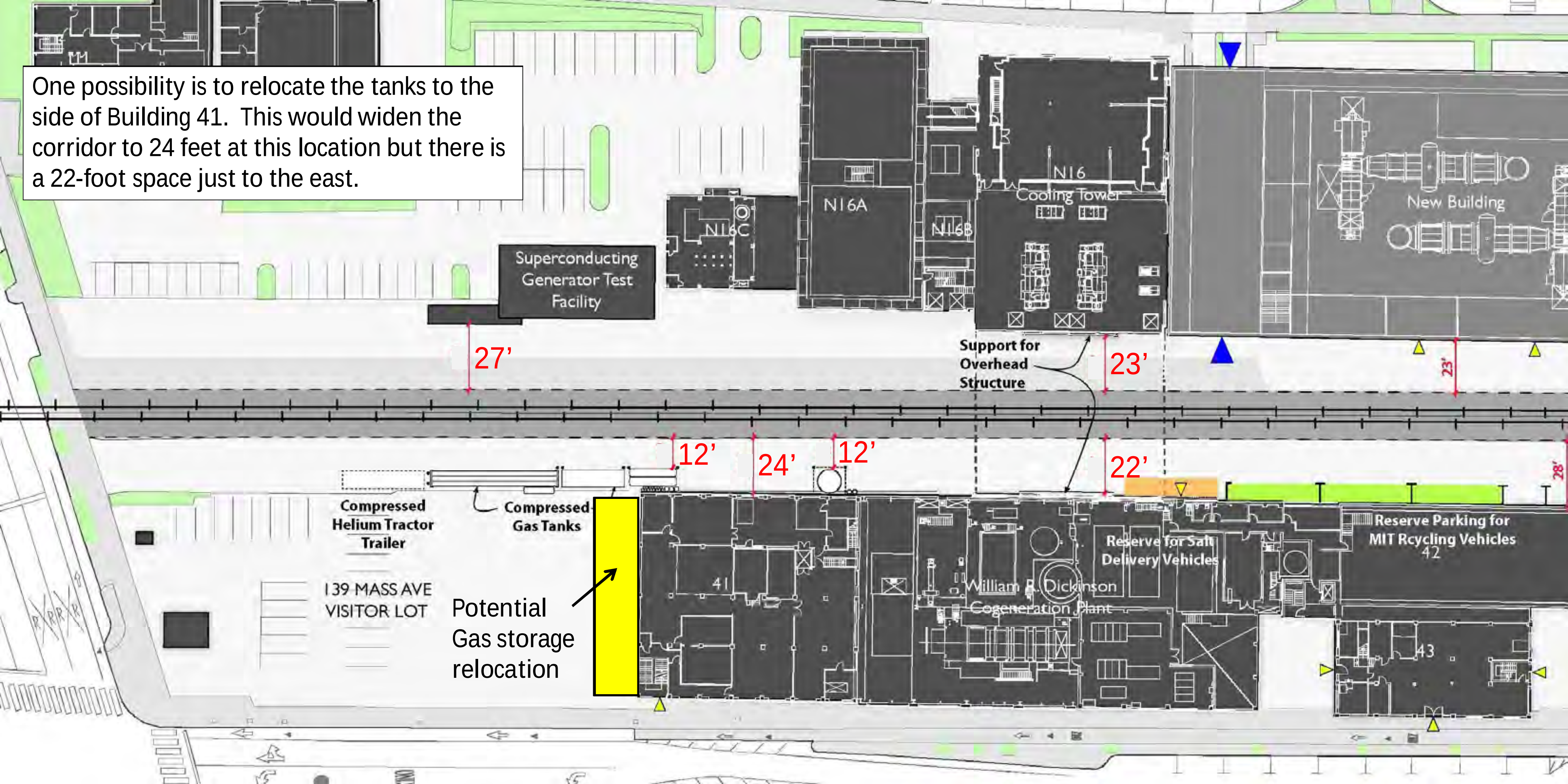
FOR INTERNAL REVIEW

…the most constrained area is at the back of Building 41 where the clear distance between the gas storage tanks and fence is 12 feet.

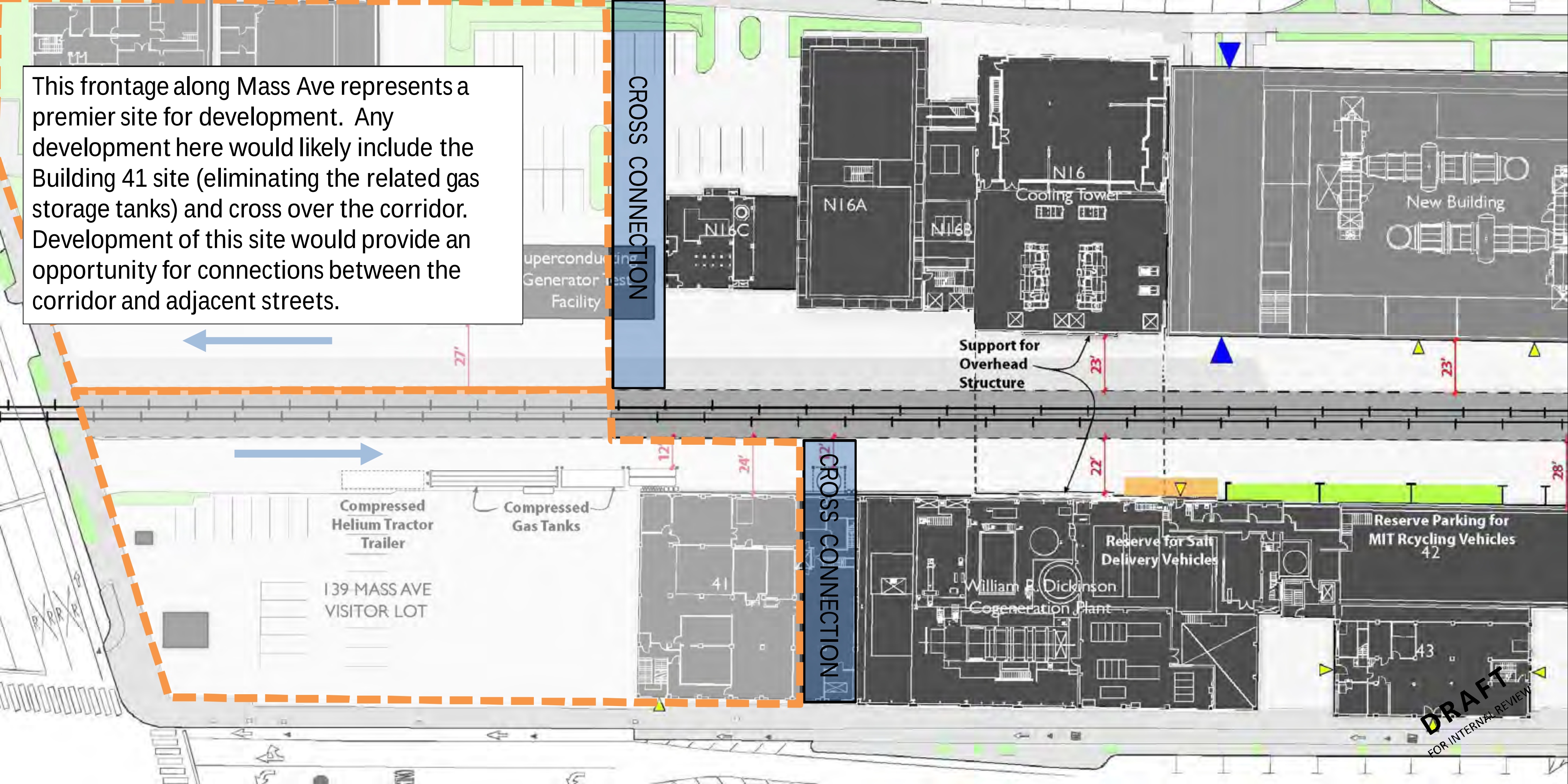

Superconducting Generator Test Facility
N16C
N16A
N16B
N16
Cooling To
27'
23'
Support for Overhead Structure
12'
24'
12'
Compressed Helium Tractor Trailer
Compressed Gas Tanks
41
William R. Dickin
Cogeneration Pl
139 MASS AVE VISITOR LOT
23'
28'
We deliver.
HELIUM COMPRESSED



One possibility is to relocate the tanks to the side of Building 41. This would widen the corridor to 24 feet at this location but there is a 22-foot space just to the east.

Potential Gas storage relocation

Superconducting Generator Test Facility
N16C
N16A
N16B
N16
Cooling Tower
New Building
27’
Support for Overhead Structure
23’
23’
12’
24’
12’
22’
28’
Compressed Helium Tractor Trailer
Compressed Gas Tanks
139 MASS AVE VISITOR LOT
41
William R. Dickinson Cogeneration Plant
Reserve for Salt Delivery Vehicles
Reserve Parking for MIT Rcycling Vehicles
42
43


CROSS CONNECTION
N16C
N16A
N16B
N16
Cooling Tower
New Building
uperconducting Generator Test Facility
27'
Support for Overhead Structure
23'
23'
12'
24'
22'
28'
CROSS CONNECTION
Compressed Helium Tractor Trailer
Compressed Gas Tanks
139 MASS AVE VISITOR LOT
41
William R. Dickinson Cogeneration Plant
Reserve for Salt Delivery Vehicles
Reserve Parking for MIT Rcycling Vehicles
42
43

This frontage along Mass Ave represents a premier site for development. Any development here would likely include the Building 41 site (eliminating the related gas storage tanks) and cross over the corridor. Development of this site would provide an opportunity for connections between the corridor and adjacent streets.

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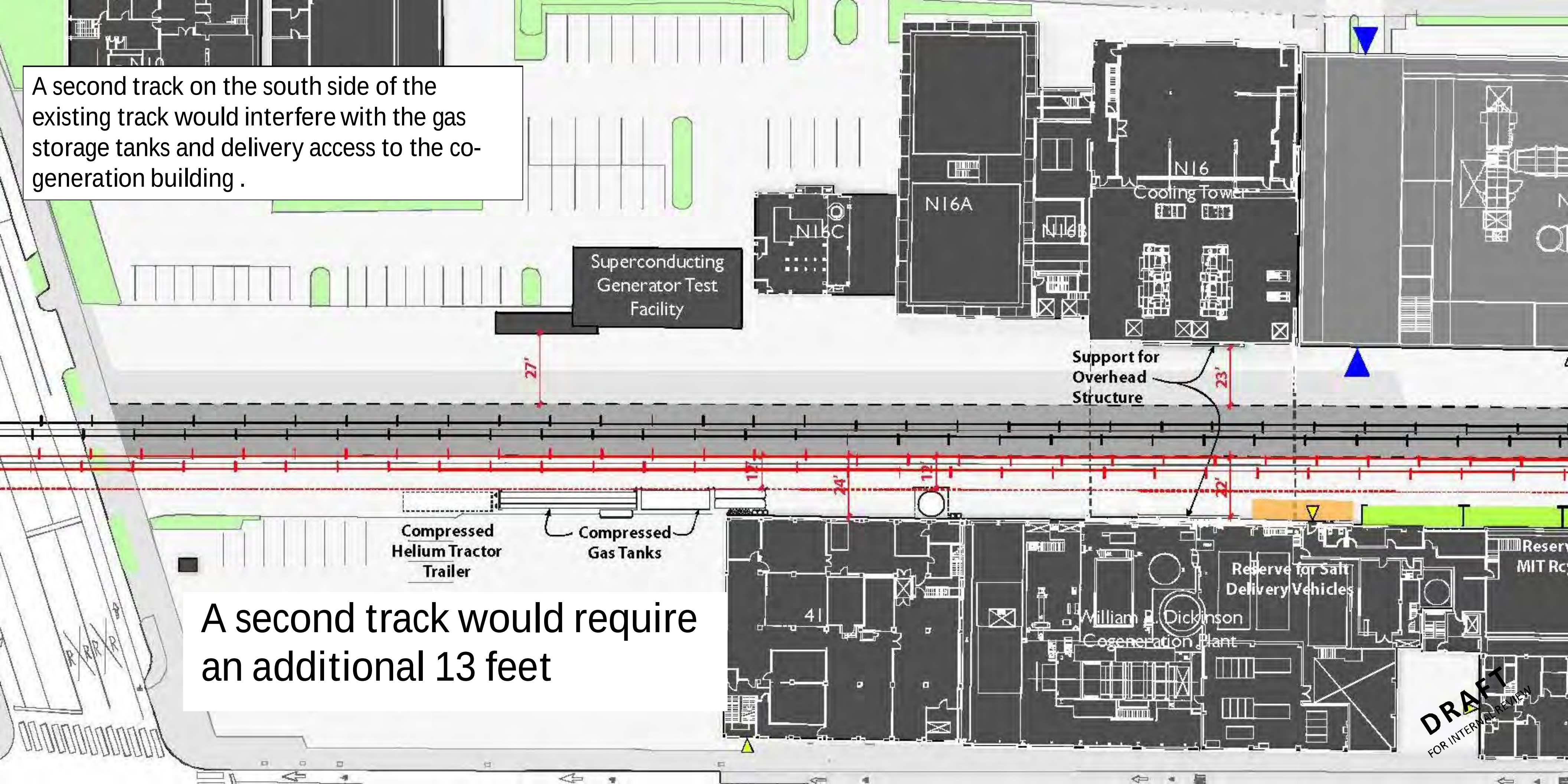
FOR INTERNAL REVIEW


N10
N16A
N16C
N16B
N16
Cooling Tower
Superconducting Generator Test Facility
27'
Support for Overhead Structure
23'
12'
24'
12'
22'
Compressed Helium Tractor Trailer
Compressed Gas Tanks
41
William R. Dickinson Cogeneration Plant
Reserve for Salt Delivery Vehicles
Reserv MIT Rc

A second track on the south side of the existing track would interfere with the gas storage tanks and delivery access to the co-generation building .

A second track would require an additional 13 feet

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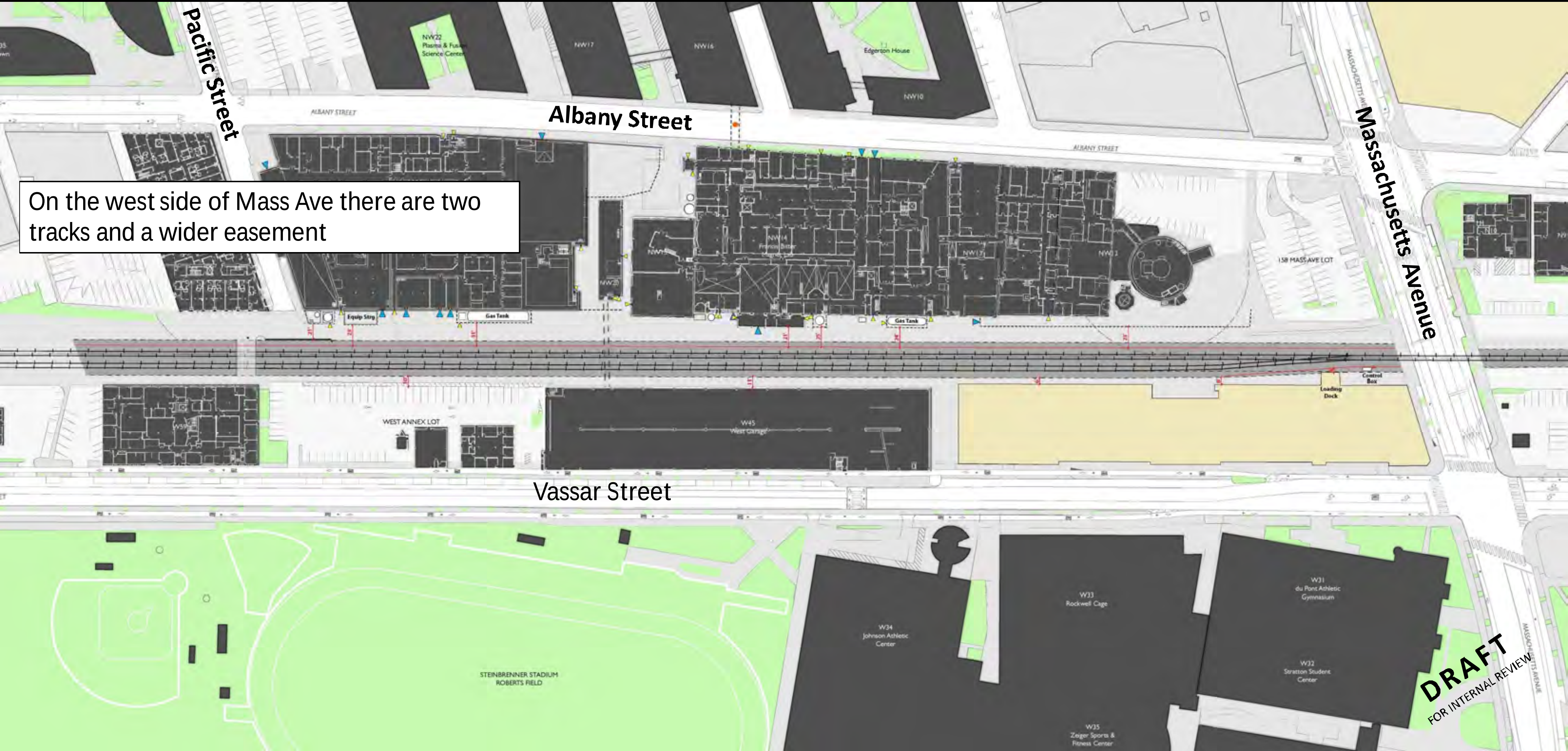

On the west side of Mass Ave there are two tracks and a wider easement

Pacific Street
Albany Street
Massachusetts Avenue
Vassar Street
NW22 Plasma & Fusion Science Center
NW17
NW16
Edgerton House
NW10
ALBANY STREET
ALBANY STREET
NW14 Francis Bitter
NW13
NW12
158 MASS AVE LOT
Equip Strg
Gas Tank
Gas Tank
WEST ANNEX LOT
W45 West Garage
Control Box
Loading Dock
STEINBRENNER STADIUM ROBERTS FIELD
W34 Johnson Athletic Center
W33 Rockwell Cage
W31 du Pont Athletic Gymnasium
W32 Stratton Student Center
W35 Zeiger Sports & Fitness Center
MASSACHUSETTS AVENUE

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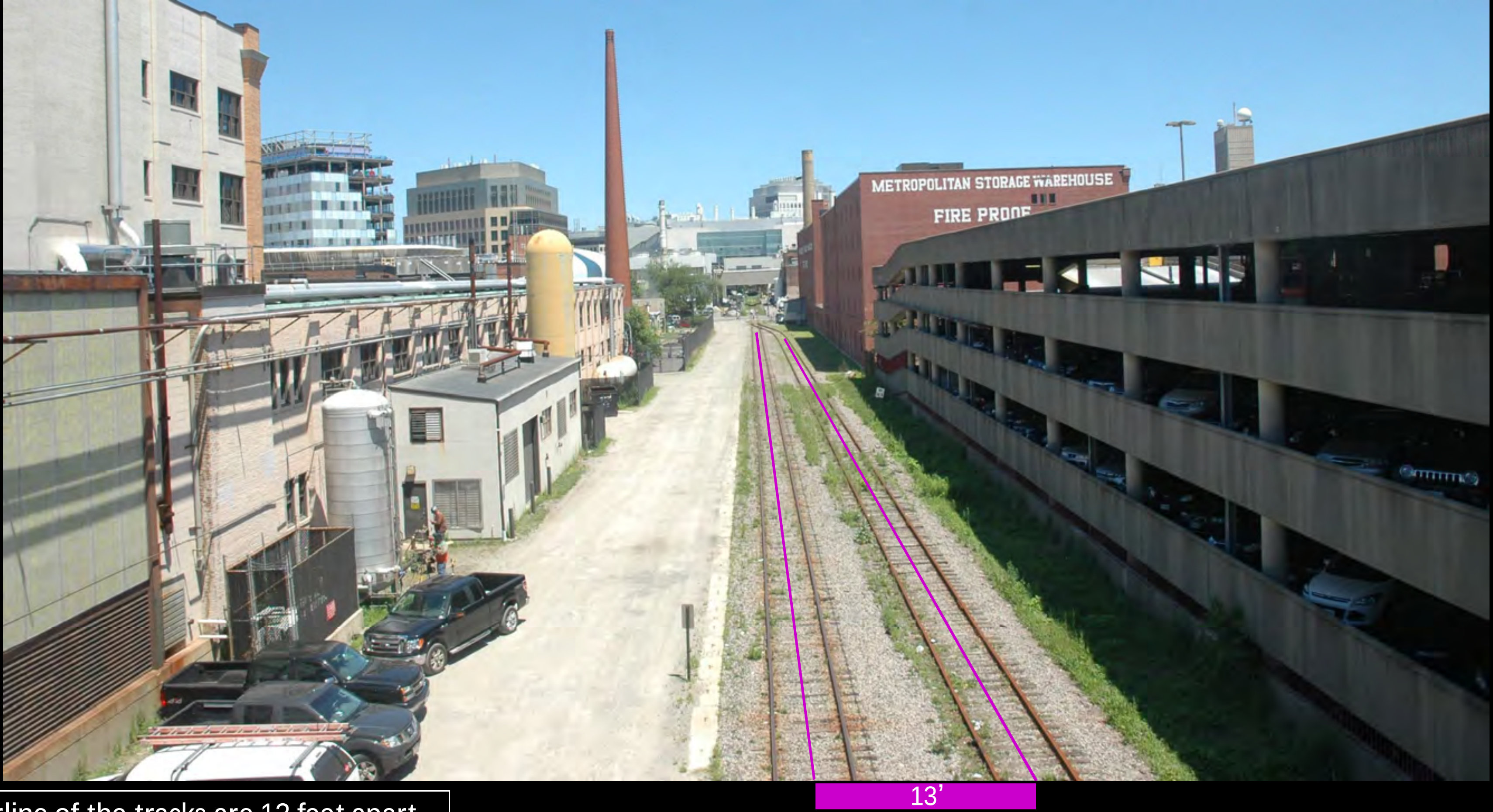
FOR INTERNAL REVIEW


METROPOLITAN STORAGE WAREHOUSE
FIRE PROOF
13’

The centerline of the tracks are 13 feet apart.

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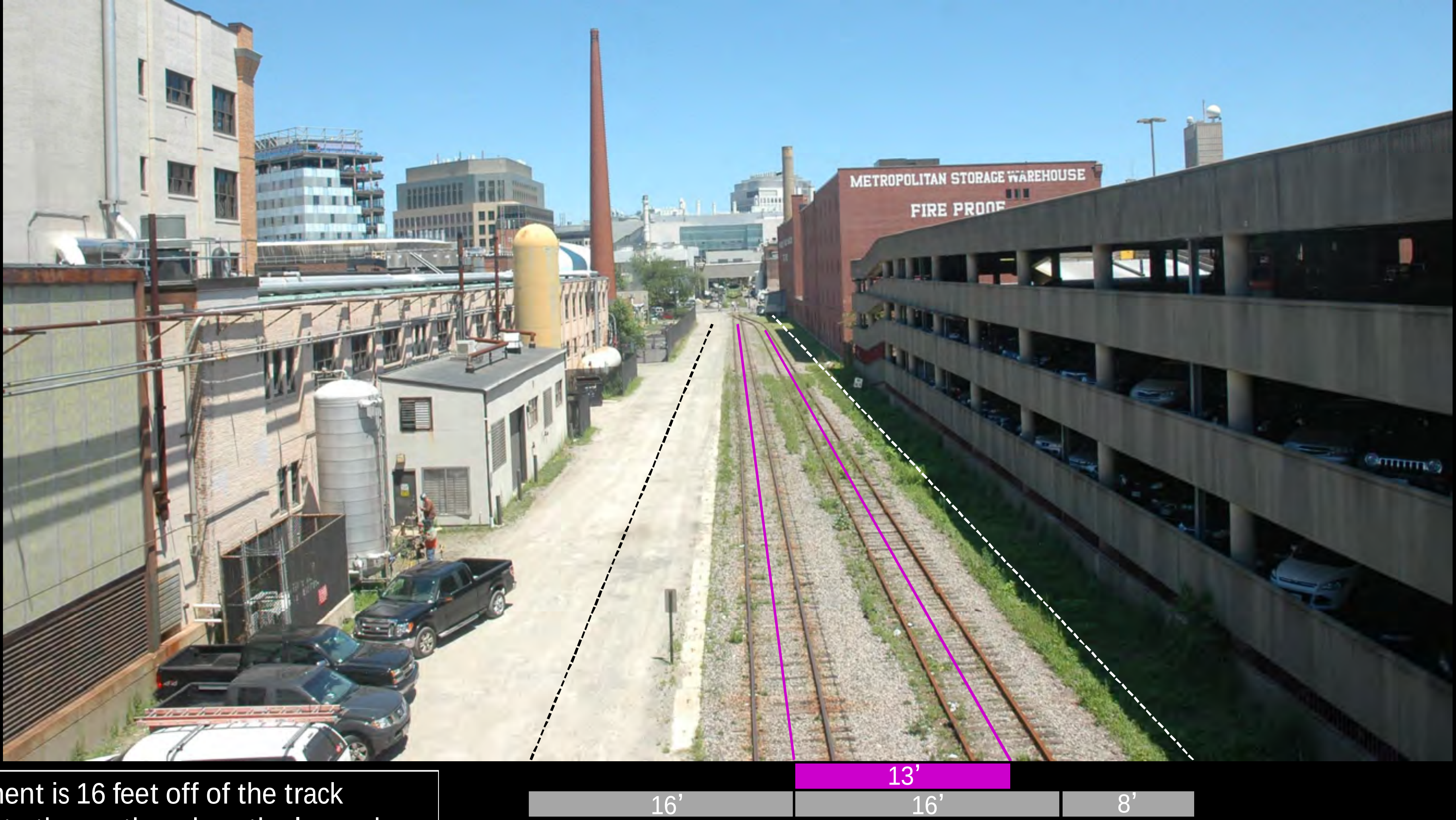
FOR INTERNAL REVIEW


METROPOLITAN STORAGE WAREHOUSE
FIRE PROOF
13’
16’
16’
8’

The easement is 16 feet off of the track centerline to the north and south plus and additional 8 feet on the south side.

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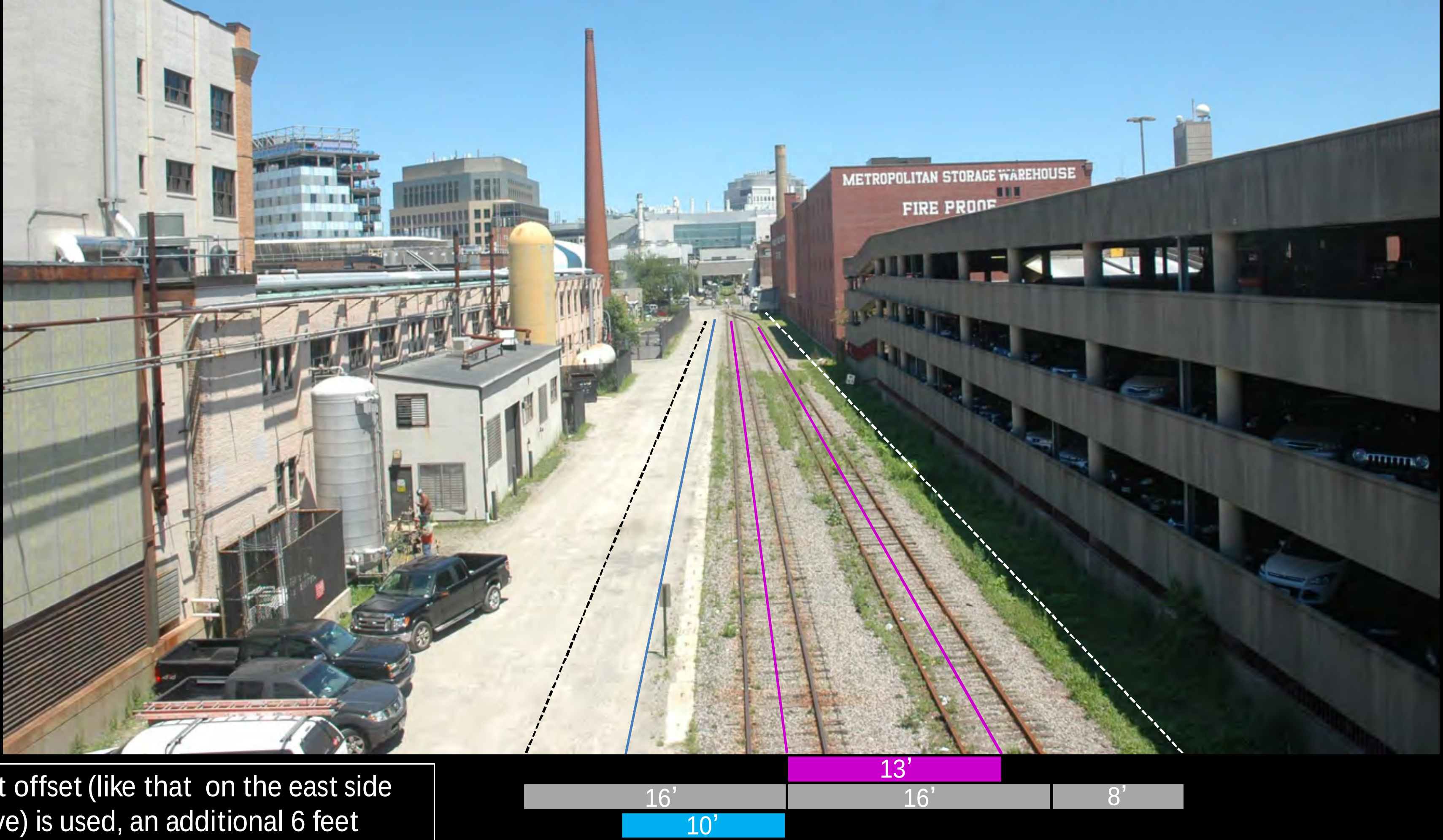
FOR INTERNAL REVIEW


METROPOLITAN STORAGE WAREHOUSE
FIRE PROOF
13’
16’
16’
8’
10’

If a 10-foot offset (like that on the east side of Mass Ave) is used, an additional 6 feet could be gained.

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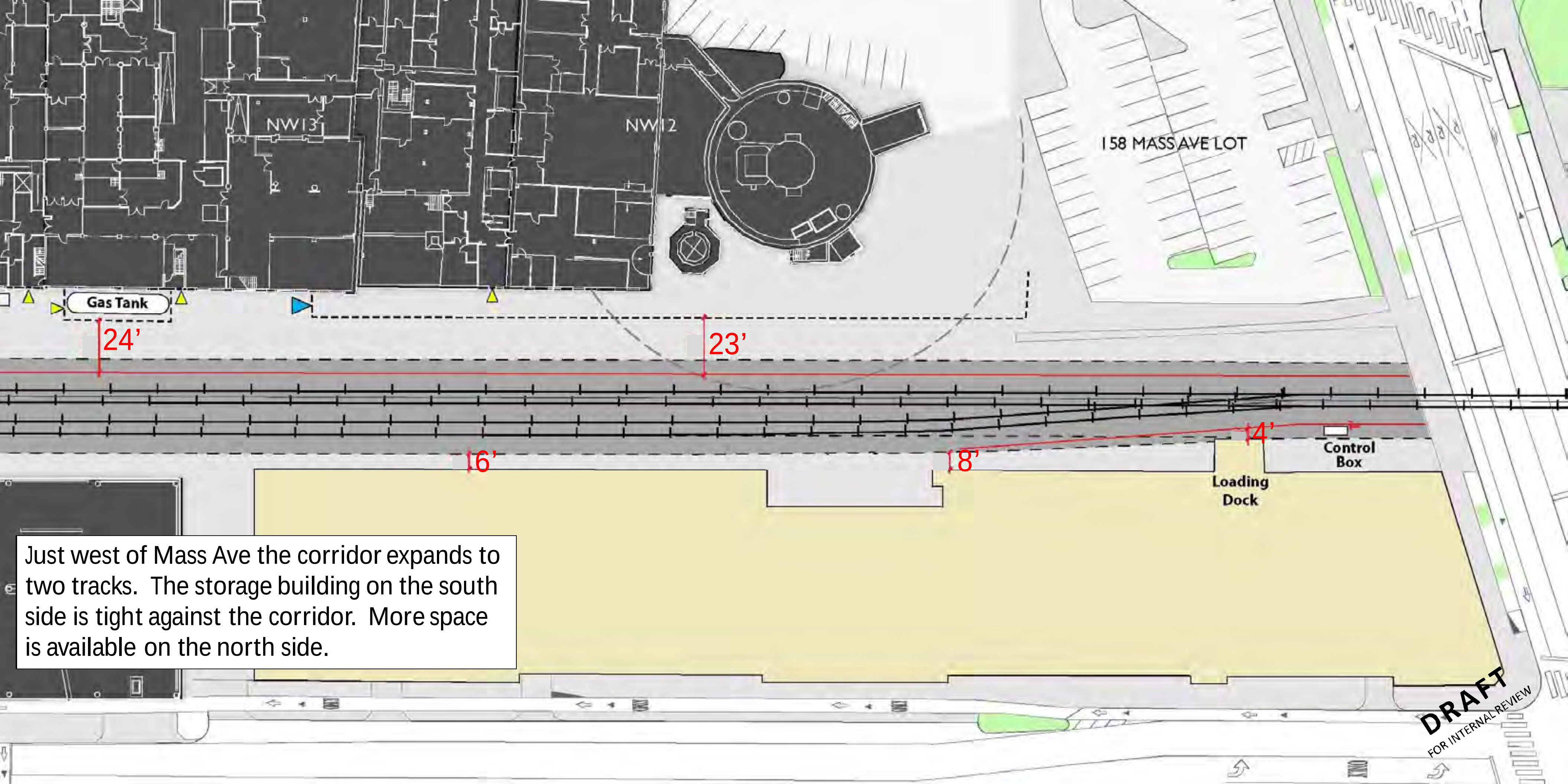
FOR INTERNAL REVIEW


NW13
NW12
158 MASS AVE LOT
Gas Tank
24’
23’
6’
8’
4’
Control Box
Loading Dock

Just west of Mass Ave the corridor expands to two tracks. The storage building on the south side is tight against the corridor. More space is available on the north side.

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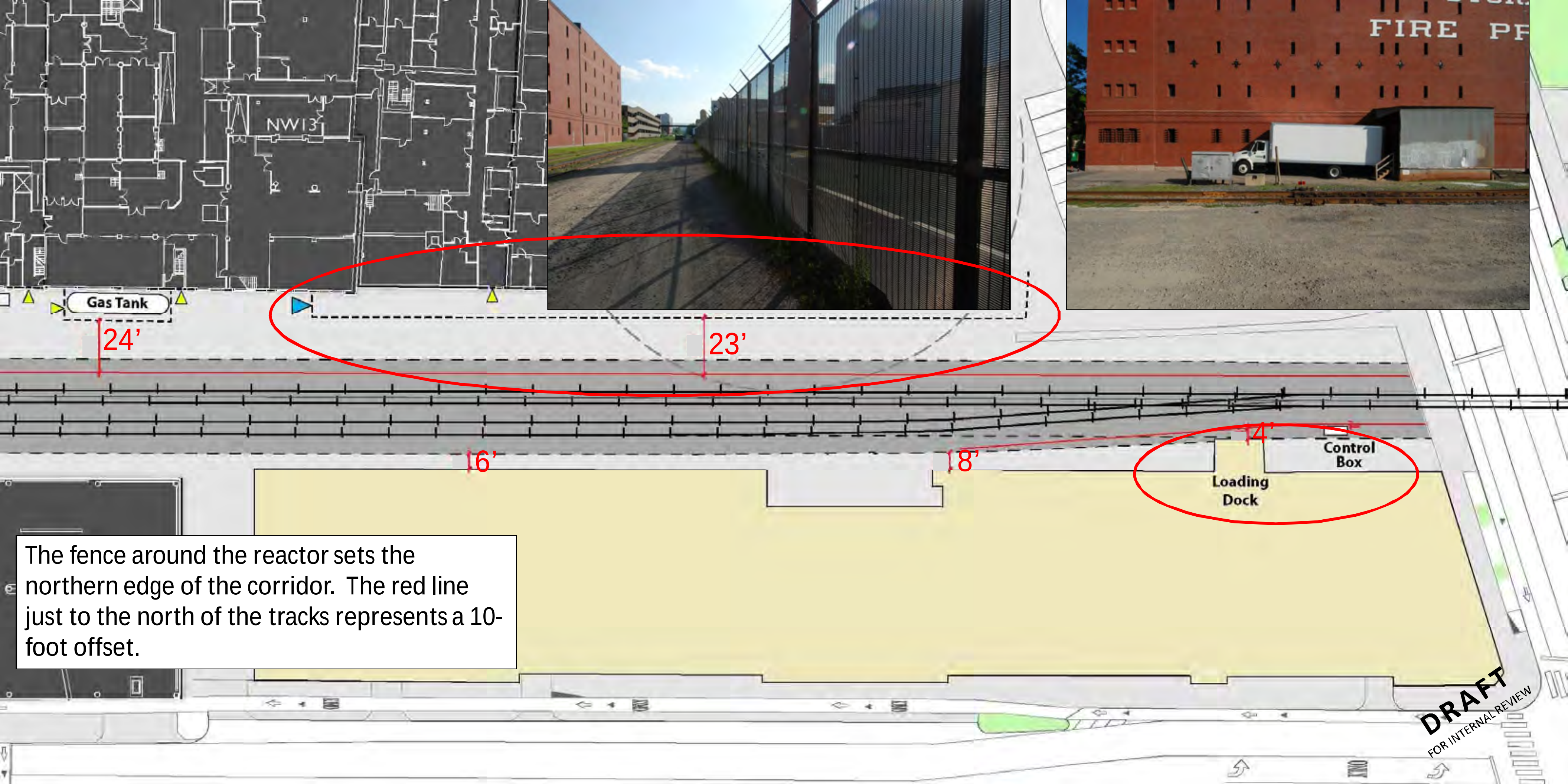
FOR INTERNAL REVIEW


NW13
Gas Tank
24’
23’
6’
8’
4’
Control Box
Loading Dock
FIRE PR

The fence around the reactor sets the northern edge of the corridor. The red line just to the north of the tracks represents a 10-foot offset.

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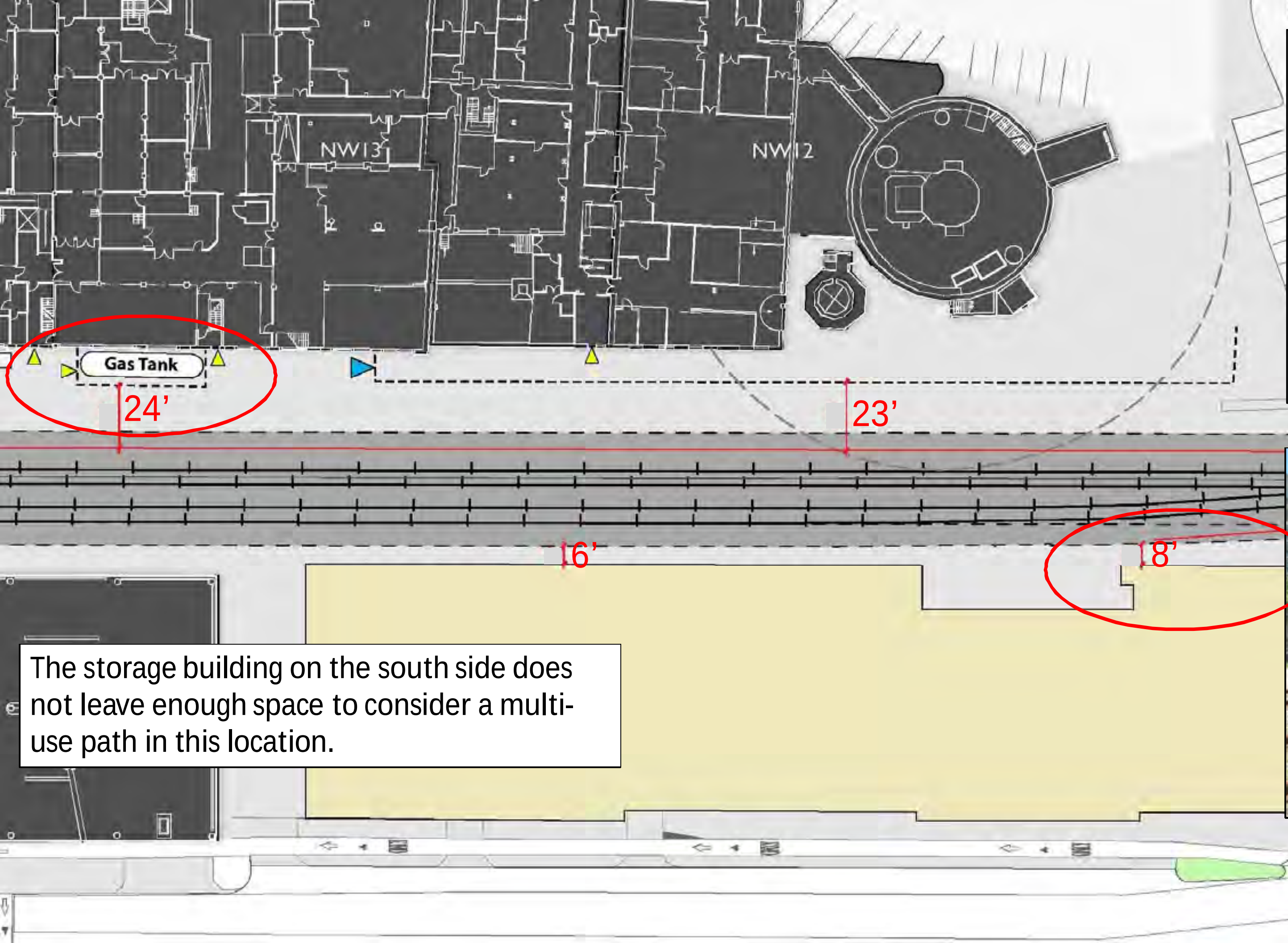
FOR INTERNAL REVIEW


NW13
NW12
Gas Tank
24’
23’
6’
8’

The storage building on the south side does not leave enough space to consider a multi-use path in this location.

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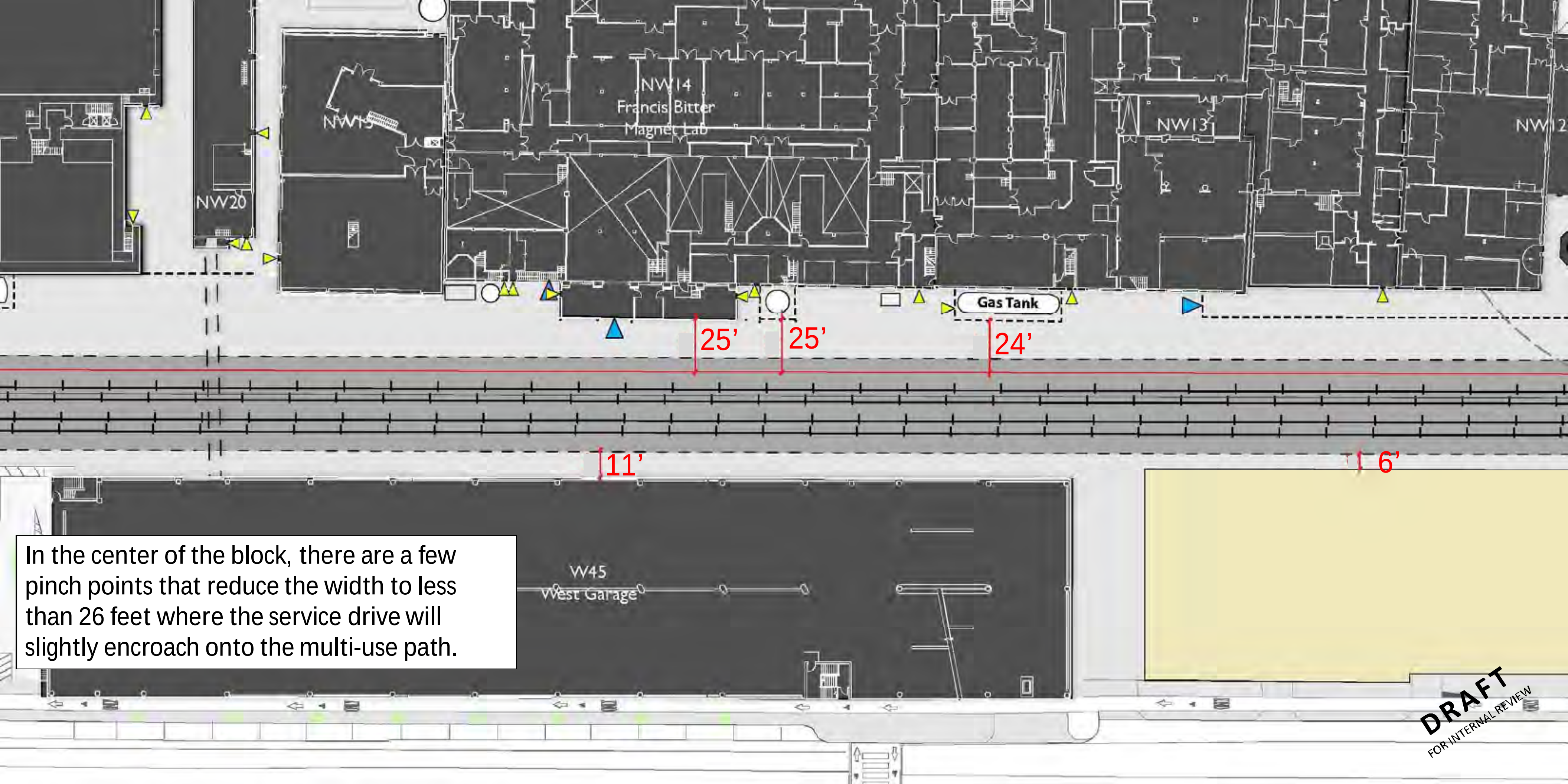
FOR INTERNAL REVIEW


NW14
Francis Bitter
Magnet Lab
NW15
NW20
NW13
NW12
Gas Tank
25’
25’
24’
11’
6’
W45
West Garage

In the center of the block, there are a few pinch points that reduce the width to less than 26 feet where the service drive will slightly encroach onto the multi-use path.

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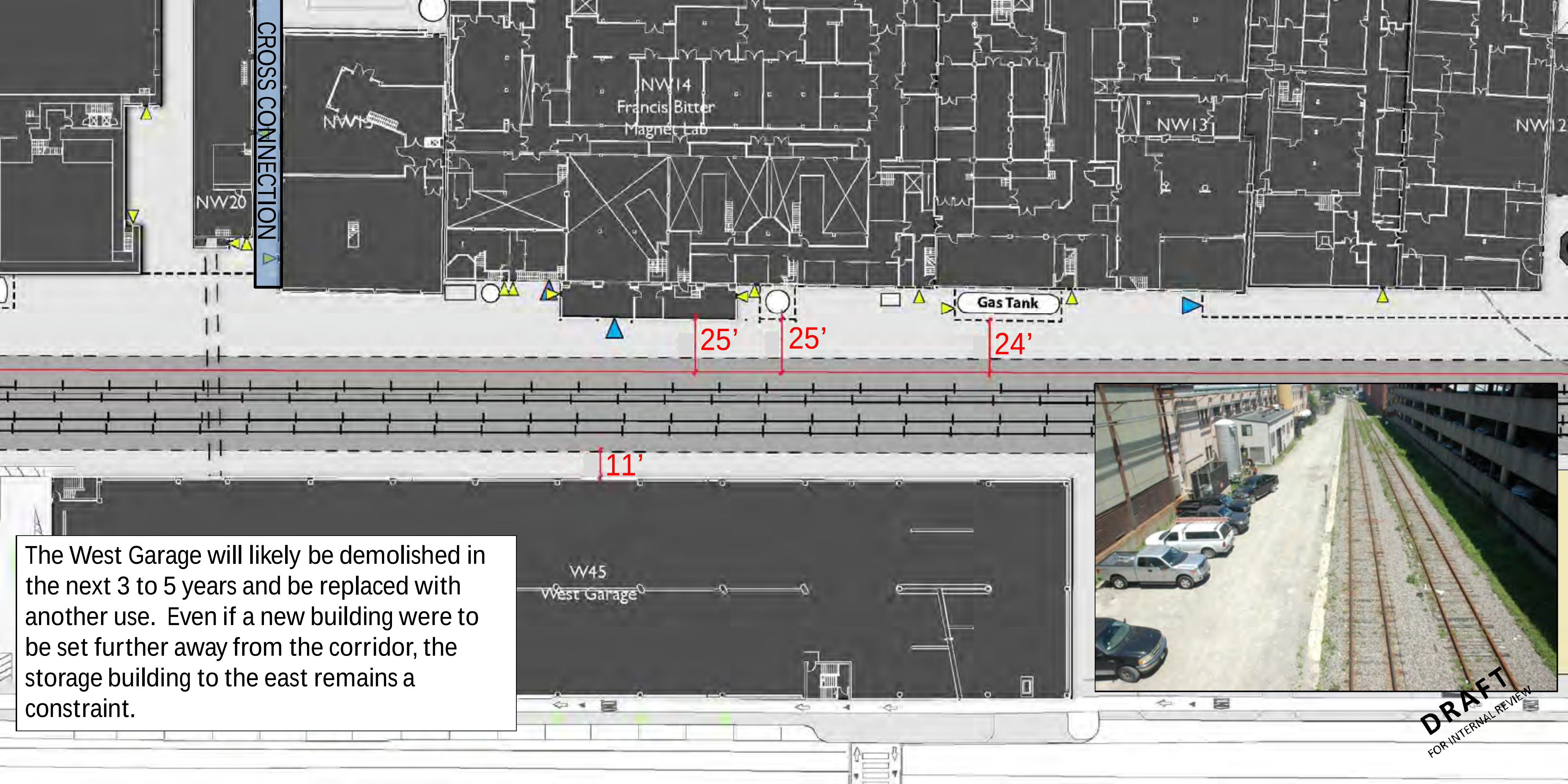
FOR INTERNAL REVIEW


CROSS CONNECTION
NW14
Francis Bitter
Magnet Lab
NW15
NW20
NW13
NW12
Gas Tank
25’
25’
24’
11’
W45
West Garage

The West Garage will likely be demolished in the next 3 to 5 years and be replaced with another use. Even if a new building were to be set further away from the corridor, the storage building to the east remains a constraint.

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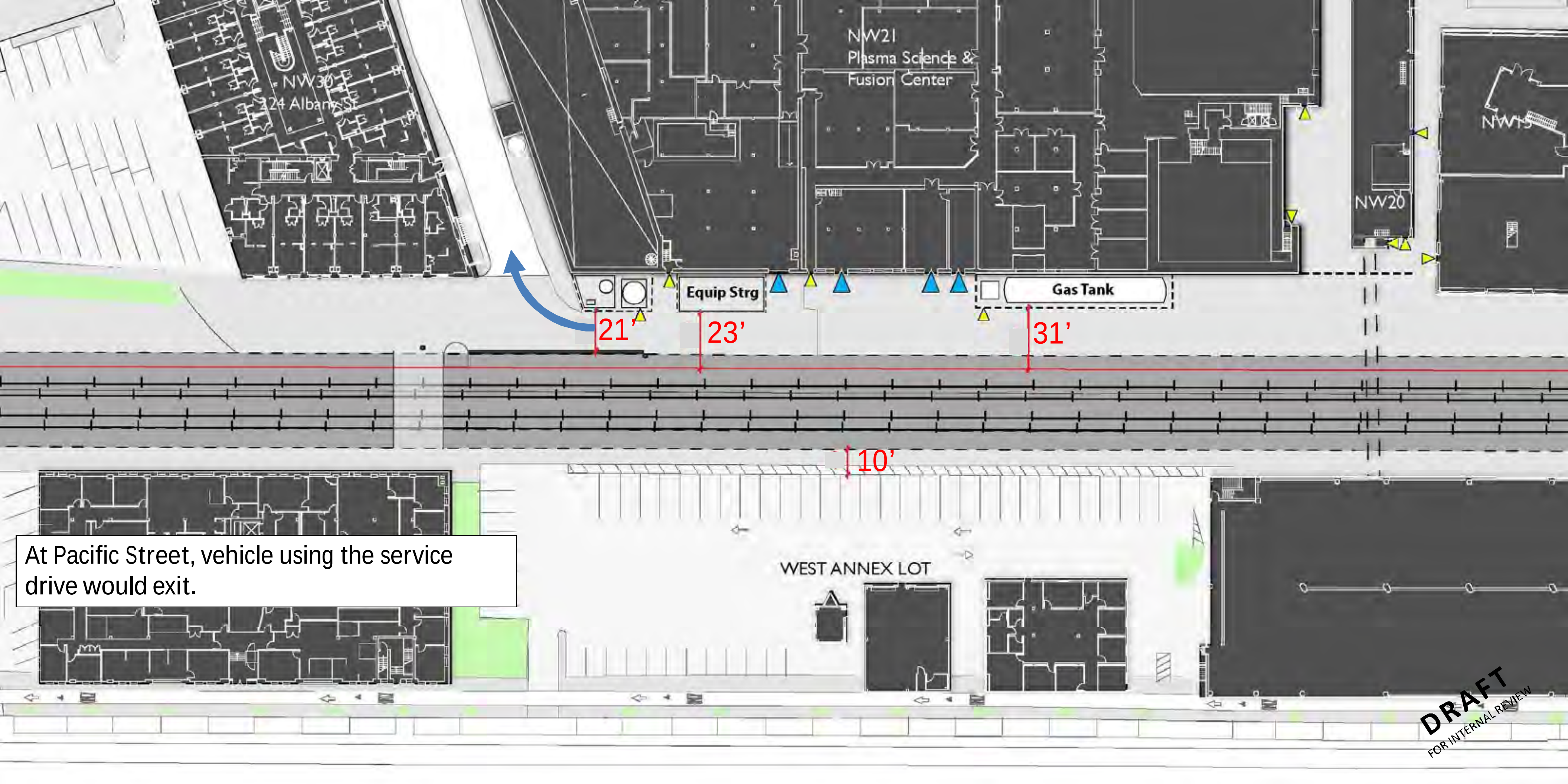
FOR INTERNAL REVIEW


NW30
224 Albany St
NW21
Plasma Science &
Fusion Center
NW20
NW15
Equip Strg
Gas Tank
21’
23’
31’
10’
WEST ANNEX LOT

At Pacific Street, vehicle using the service drive would exit.

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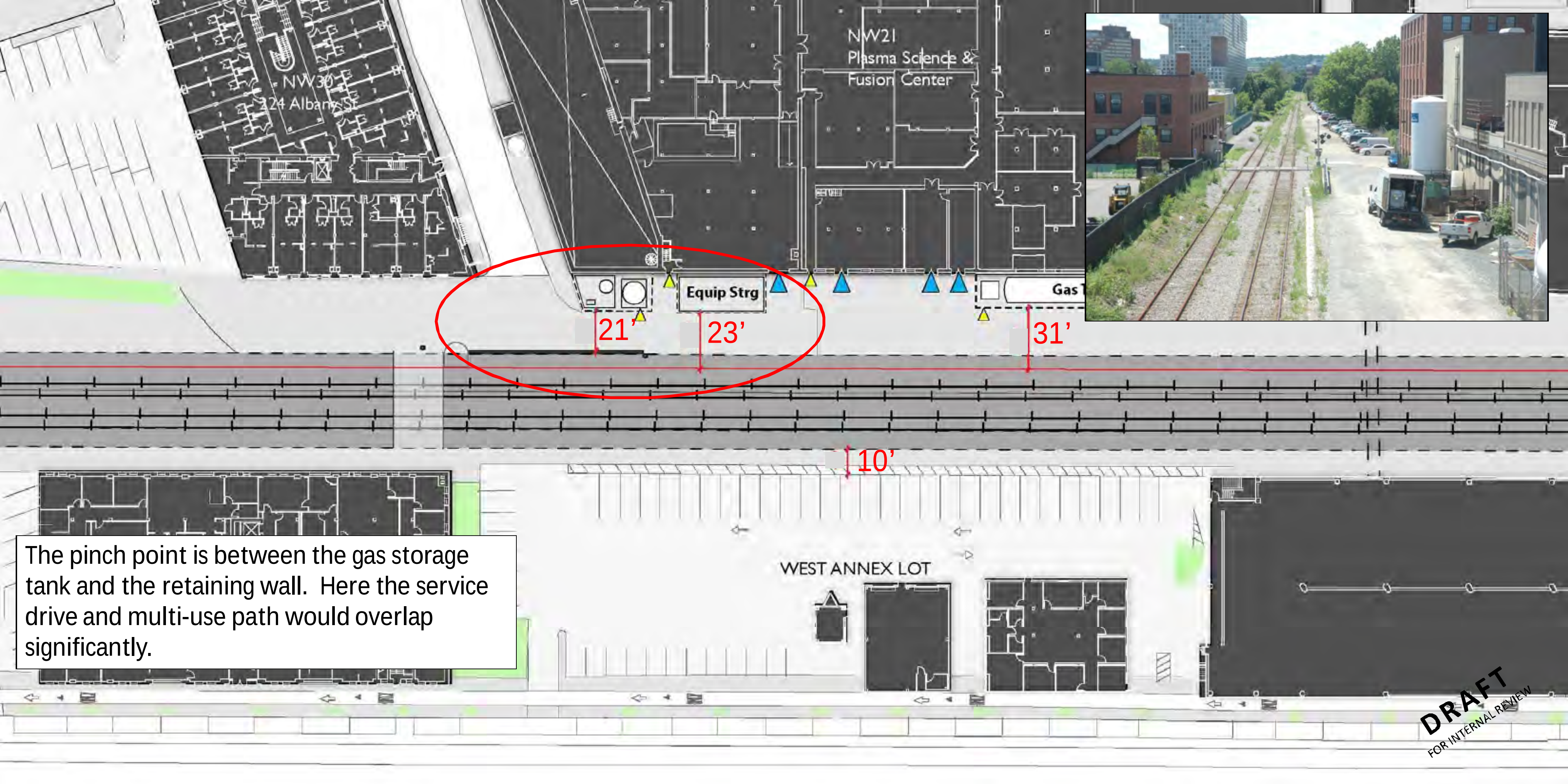
FOR INTERNAL REVIEW


NW30
224 Albany St
NW21
Plasma Science &
Fusion Center
Equip Strg
Gas T
21'
23'
31'
10'
WEST ANNEX LOT

The pinch point is between the gas storage tank and the retaining wall. Here the service drive and multi-use path would overlap significantly.

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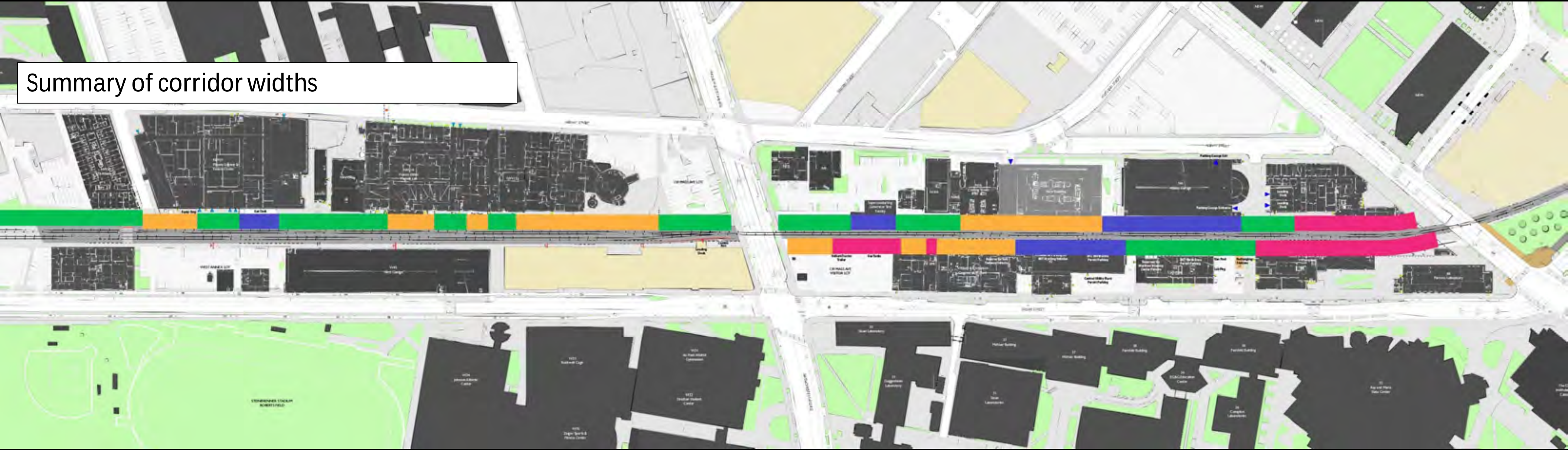
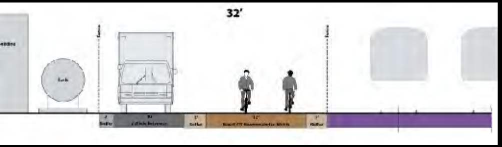
Corridor segmented by width

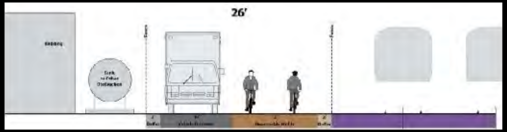


Summary of corridor widths

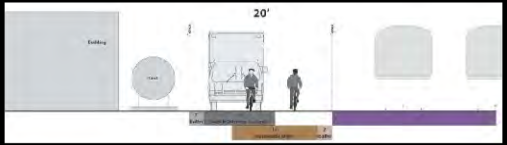
🟩 32’ or more



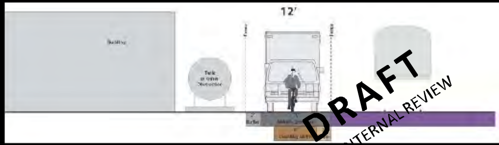
🟦 32’ - 26’



🟧 26’ - 20’



🟪 20’ or less



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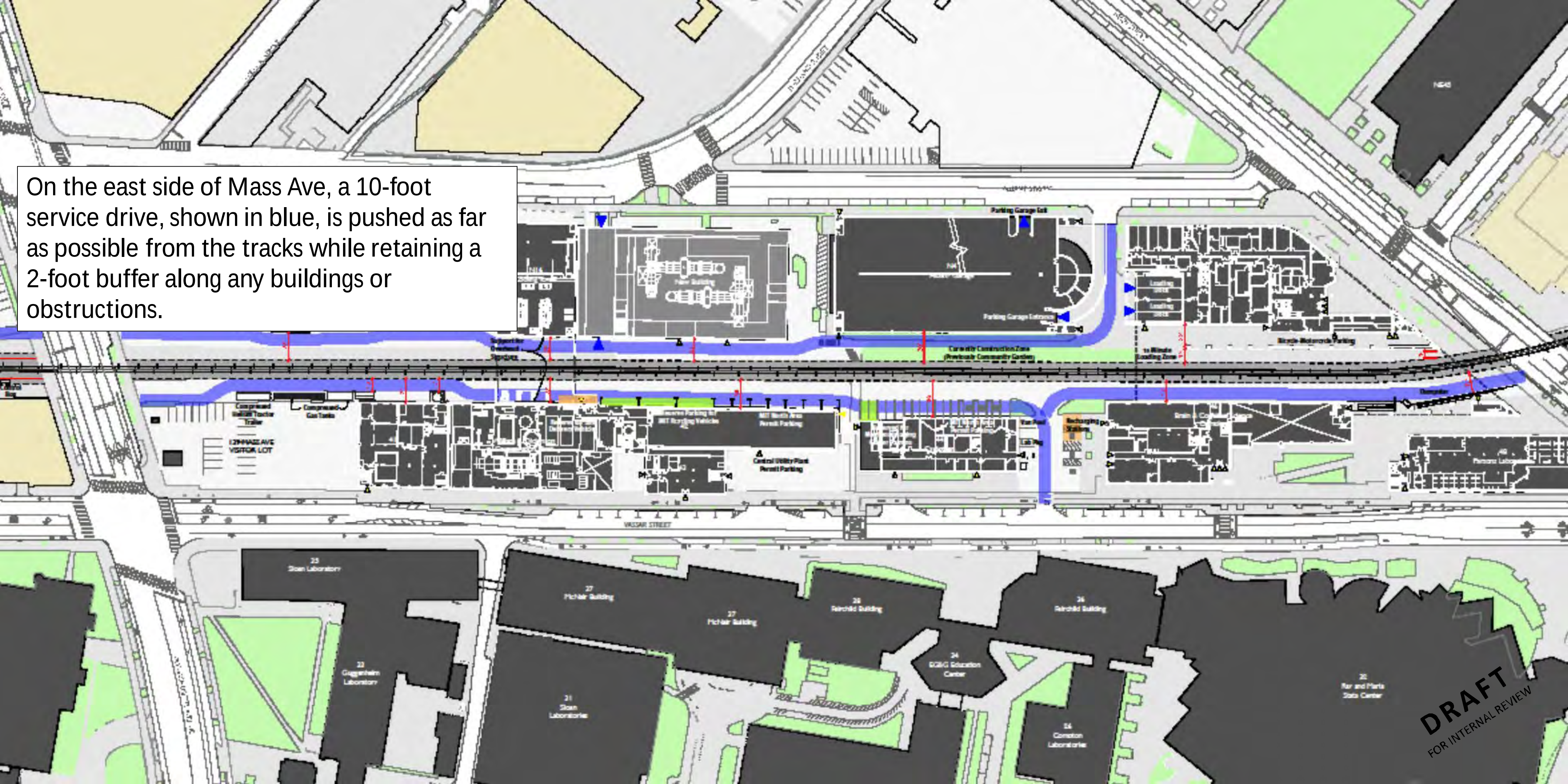
INTERNAL REVIEW

On the east side of Mass Ave, a 10-foot service drive, shown in blue, is pushed as far as possible from the tracks while retaining a 2-foot buffer along any buildings or obstructions.


Parking Garage Exit
N4
Parking Garage Entrance
Loading Dock
Loading Dock
15 Minute Loading Zone
Bicycle-Motorcycle Parking
Support for Overhead Signage
Currently Construction Zone
(Previously Community Garden)
Compressed Gas Tanks
MIT North Area Permit Parking
Central Utility Plant Permit Parking
Van Pool
Lab Pkg
Recharging Stations
Dumpster
VASSAR STREET
23 Sloan Laboratory
27 McNair Building
27 McNair Building
28 Fairchild Building
36 Fairchild Building
22 Guggenheim Laboratory
31 Sloan Laboratories
34 EG&G Education Center
38 Compton Laboratories
32 Ray and Maria Stata Center

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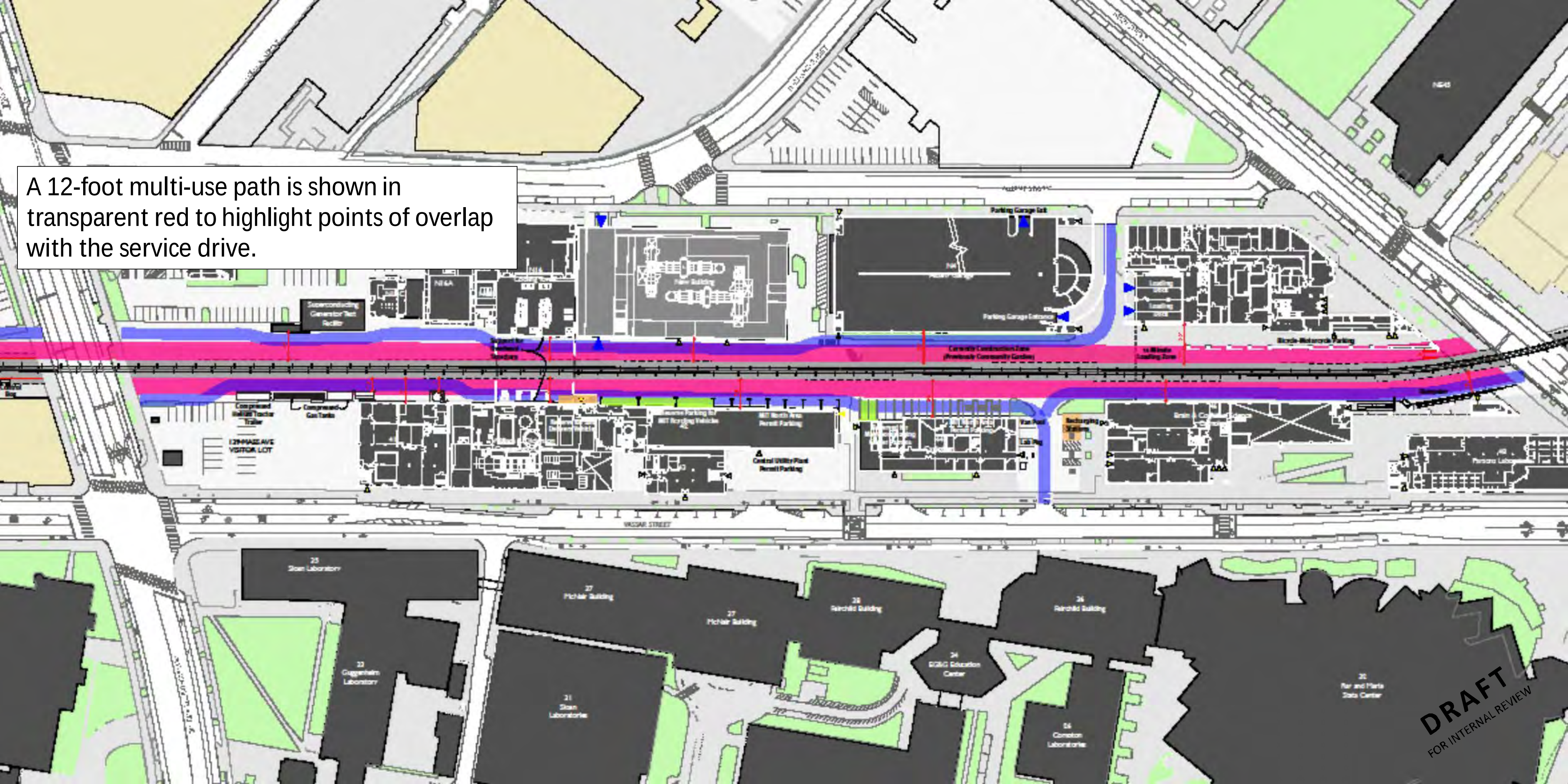
FOR INTERNAL REVIEW


Superconducting Generator Test Facility
N16A
New Building
Parking Garage Exit
Parking Garage Entrance
Loading Dock
Loading Dock
Bicycle-Motorcycle Parking
Currently Construction Zone (Previously Community Garden)
15 Minute Loading Zone
Compressed Tractor Trailer
Compressed Gas Tanks
VISITOR LOT
MIT North Area Permit Parking
Central Utility Plant Permit Parking
Van Pool
Lab Svg
Recharging Stations
Brain & Cognitive Science
Parsons Laboratory
VASSAR STREET
25 Sloan Laboratory
27 McNair Building
27 McNair Building
28 Fairchild Building
26 Fairchild Building
22 Guggenheim Laboratory
31 Sloan Laboratories
24 EG&G Education Center
56 Compton Laboratories
32 Ray and Maria Stata Center

A 12-foot multi-use path is shown in transparent red to highlight points of overlap with the service drive.

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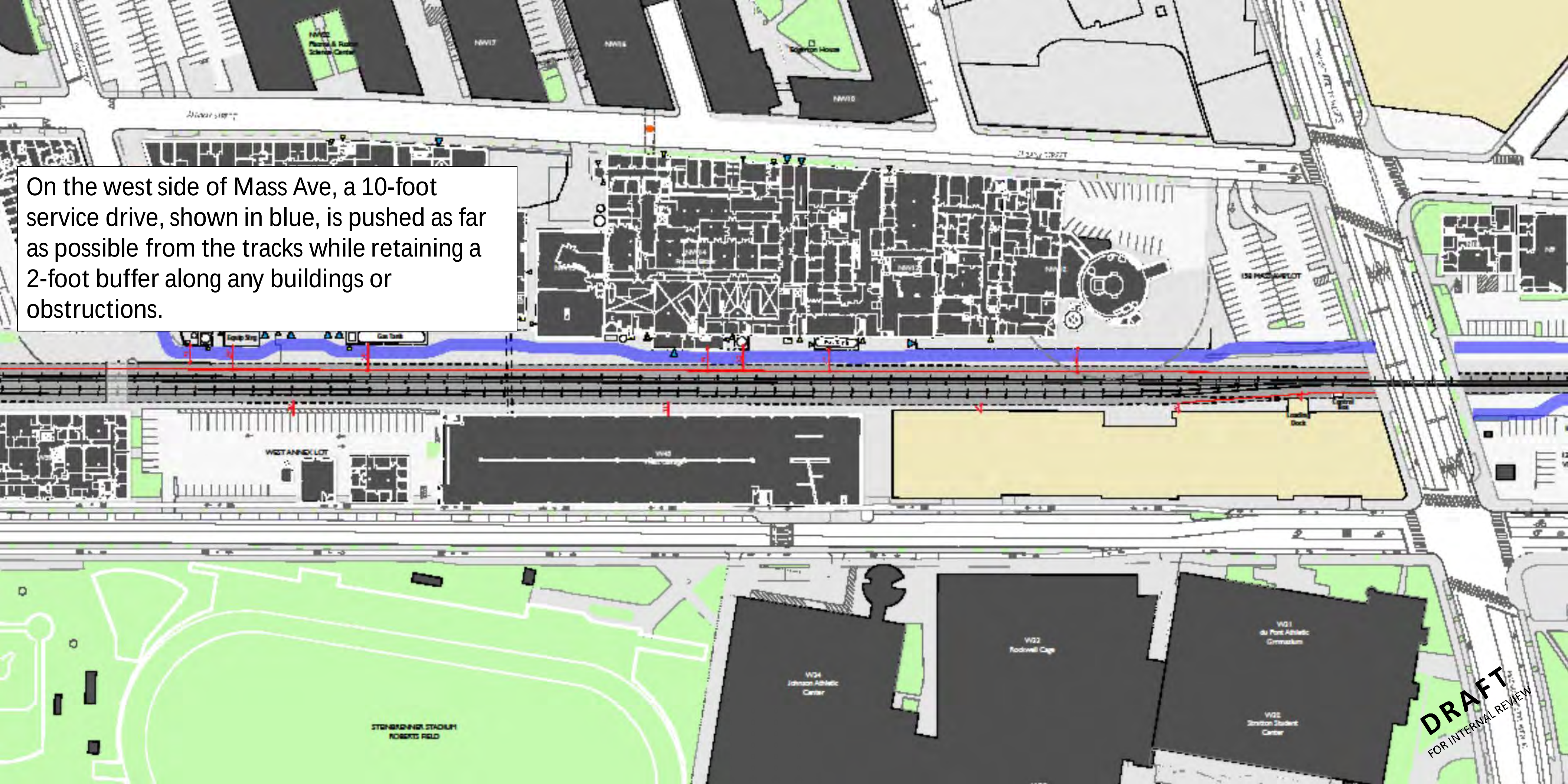
FOR INTERNAL REVIEW


NW22
Plasma & Fusion Science Center
NW17
NW16
Edgerton House
NW10
NW12
150 MASS AVE LOT
Equip Strg
Gas Tank
WEST ANNEX LOT
W45
Loading Dock
Control Box
W34
Johnson Athletic Center
W33
Rockwell Cage
W31
du Pont Athletic Gymnasium
W20
Stratton Student Center
STEINBRENNER STADIUM
ROBERTS FIELD

On the west side of Mass Ave, a 10-foot service drive, shown in blue, is pushed as far as possible from the tracks while retaining a 2-foot buffer along any buildings or obstructions.

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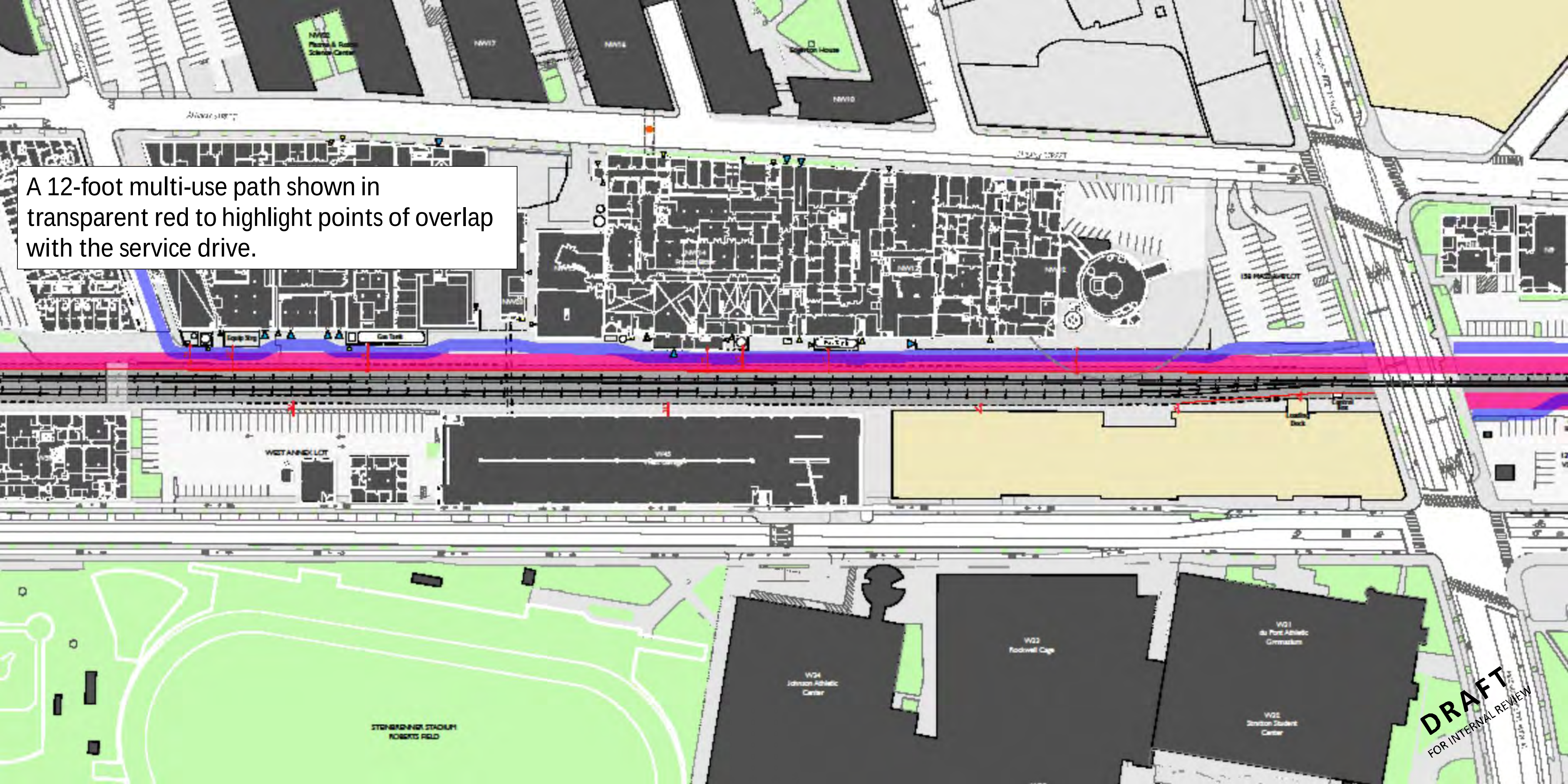
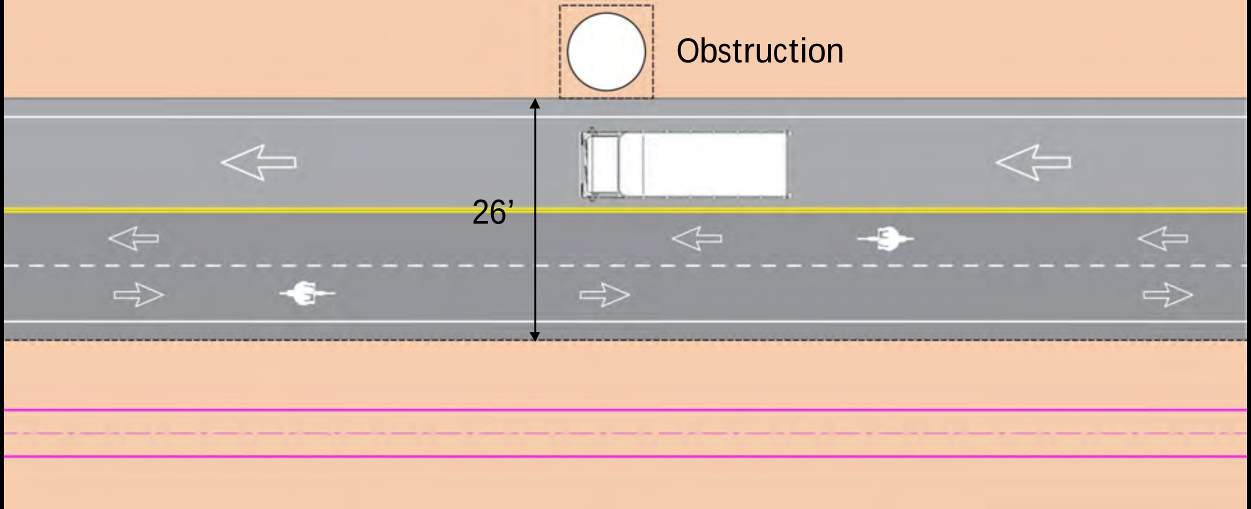
FOR INTERNAL REVIEW

A 12-foot multi-use path shown in transparent red to highlight points of overlap with the service drive.


NW22
Plasma & Fusion Science Center
NW17
NW16
Edgerton House
NW10
NW14
Equip Strg
Gas Tank
NW13
NW12
150 MASS AVE LOT
WEST ANNEX LOT
W45
Loading Dock
W34
Johnson Athletic Center
W33
Rockwell Cage
W31
du Pont Athletic Gymnasium
W35
Stratton Student Center
STEINBRENNER STADIUM
ROBERTS FIELD

DRAFT
FOR INTERNAL REVIEW



10’ Drive with 2’ shoulder

12’ Path with 2’ shoulder

In locations where a 26-foot width is available there is no overlap between a 12-foot multi-use path and a 10-foot service drive.

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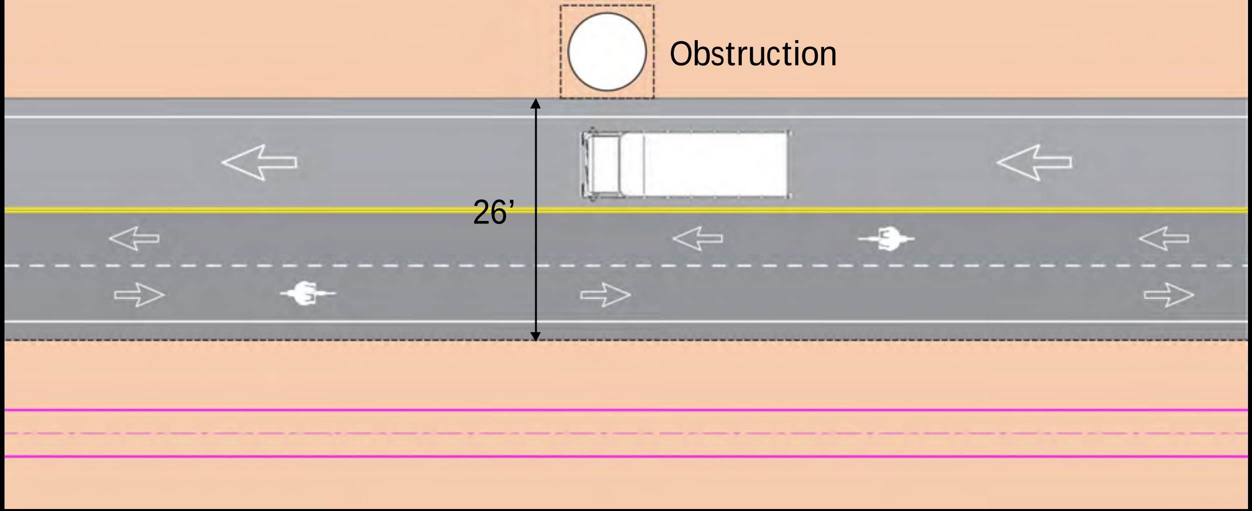
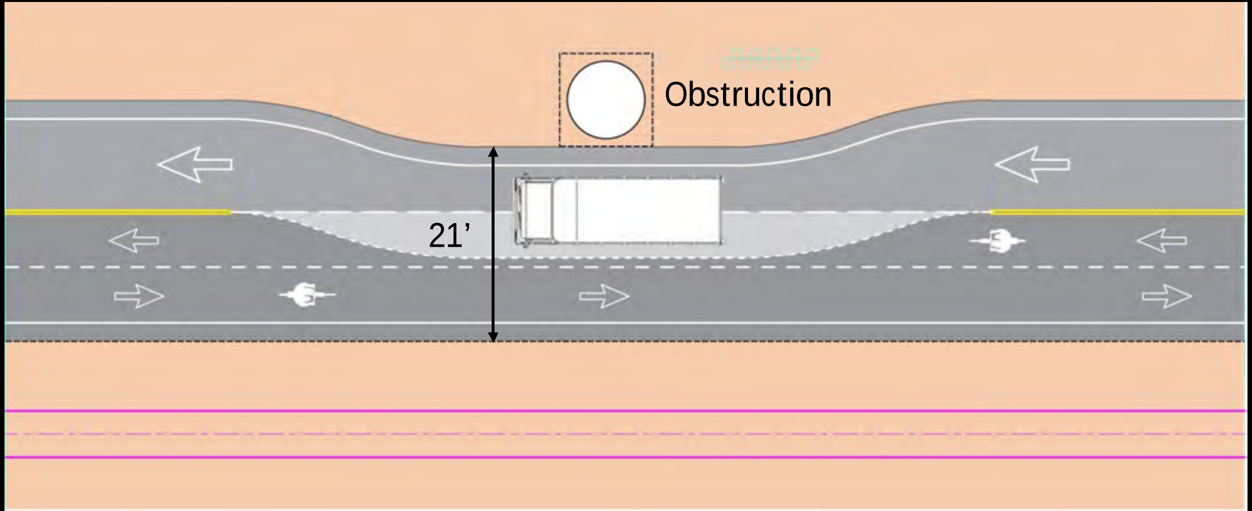
FOR INTERNAL REVIEW



10’ Drive with 2’ shoulder

12’ Path with 2’ shoulder

Where there is less than 26-feet, the path and drive overlap. How much of a problem this represents is based on the frequency of vehicles sharing the same space.



10’ Drive with 2’ shoulder

5’ Overlap at obstruction

12’ Path with 2’ shoulder

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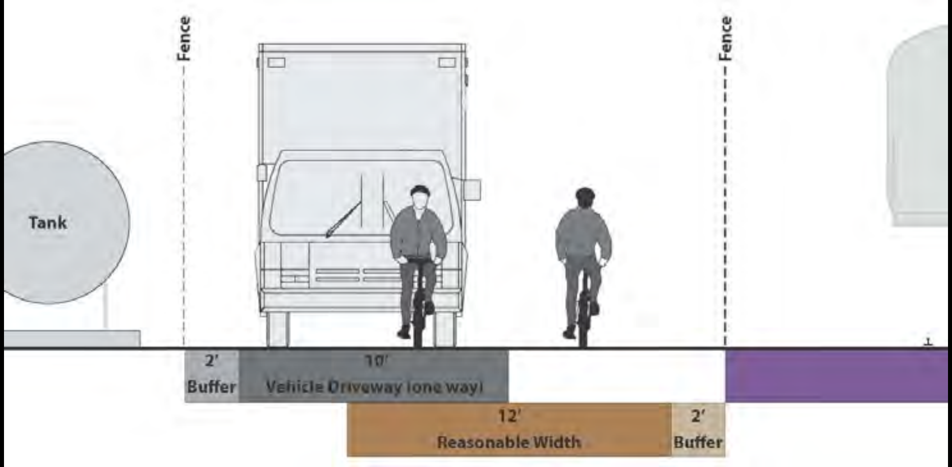
FOR INTERNAL REVIEW

Bicycle-Pedestrian-Vehicle Conflicts

There will be locations where bicycles, pedestrians and vehicles will need to use the same surface

Think of it as a shared street – like Washington Street in Downtown Crossing


Fence
Fence
Tank
2'
Buffer
10'
Vehicle Driveway (one way)
12'
Reasonable Width
2'
Buffer

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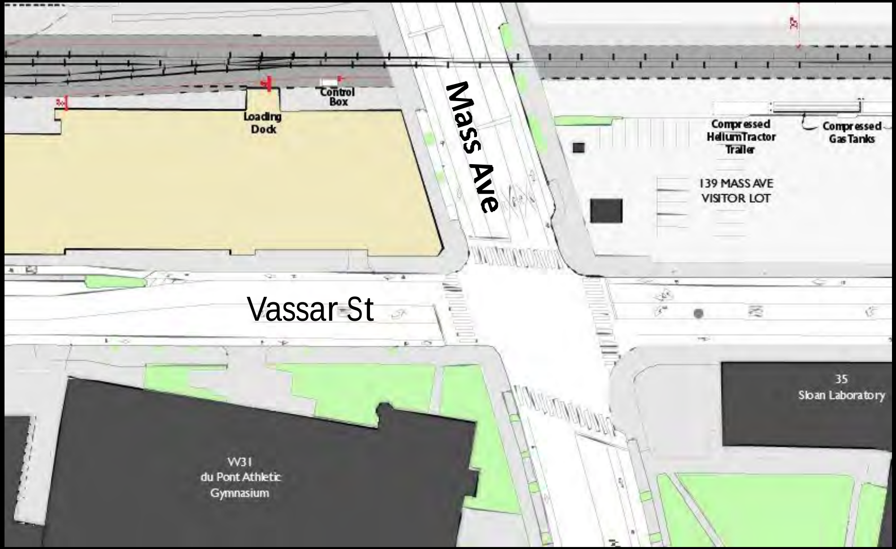
FOR INTERNAL REVIEW

How many bicycles?

It is difficult to predict the number of users a Grand Junction Path would attract. As a starting point, we used the number of bicyclists on Vassar street at the peak hour.

Peak Hour Bicycle Counts at Vassar Street & Mass Ave (2012)

23 – 30
per min
both ways


Control Box
Loading Dock
Mass Ave
Compressed HeliumTractor Trailer
Compressed Gas Tanks
139 MASS AVE VISITOR LOT
Vassar St
35 Sloan Laboratory
W31 du Pont Athletic Gymnasium

104 both ways
1.7 per minute

33 ←
71 →

← 188
→ 275

463 both ways
7.7 per minute

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FOR INTERNAL REVIEW

How many vehicles?

Number of Service Vehicle Trips

Estimate 25 per day
half in the peak hour
1 every 5 minutes

The other part of the equation is the number of service vehicles using the corridor. At peak times we estimated 12 per hour. However, during much of the day there may be no vehicles using the service drive.

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Service Vehicles in the Grand Junction Corridor

Number of Service Vehicle Trips

Estimate 25 per day
half in the peak hour
1 every 6 minute

Types of Conditions

1. Service vehicle moving
2. Service vehicle parked (from a few minutes to all day)
3. Service vehicle going around another parked vehicle

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FOR INTERNAL REVIEW

Service Vehicles in the Grand Junction Corridor

Number of Service Vehicle Trips

Estimate 25 per day
half in the peak hour
1 every 6 minute

Types of Conditions

1. Service vehicle moving
2. Service vehicle parked (from a few minutes to all day)
3. Service vehicle going around another parked vehicle

Potential Mitigations

1. One-way movement
2. Off-peak delivery
3. Defined parking locations
4. Warning signs & striping
5. Speed limit

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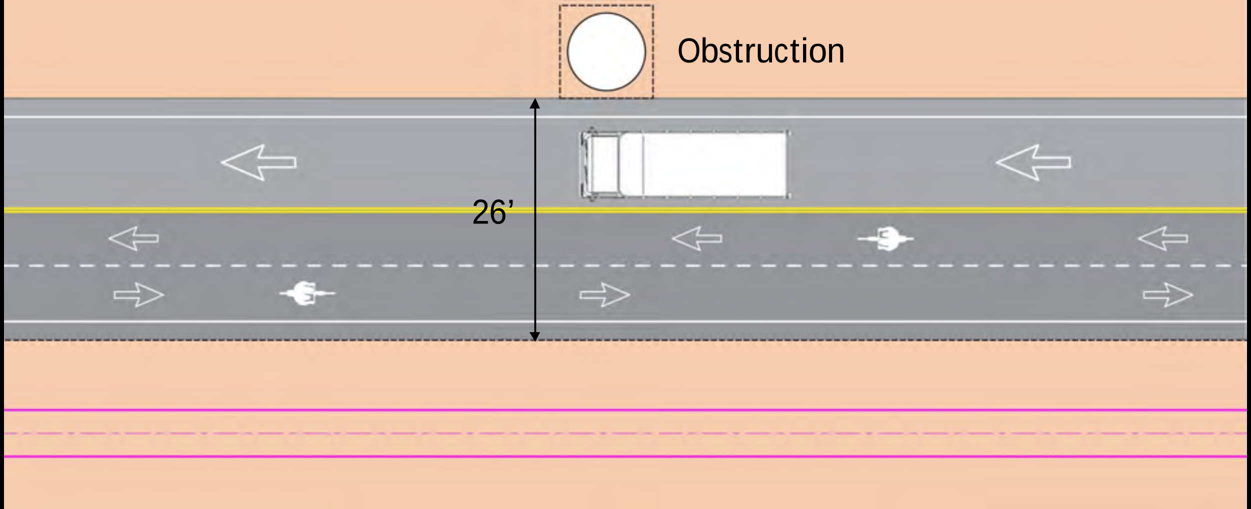
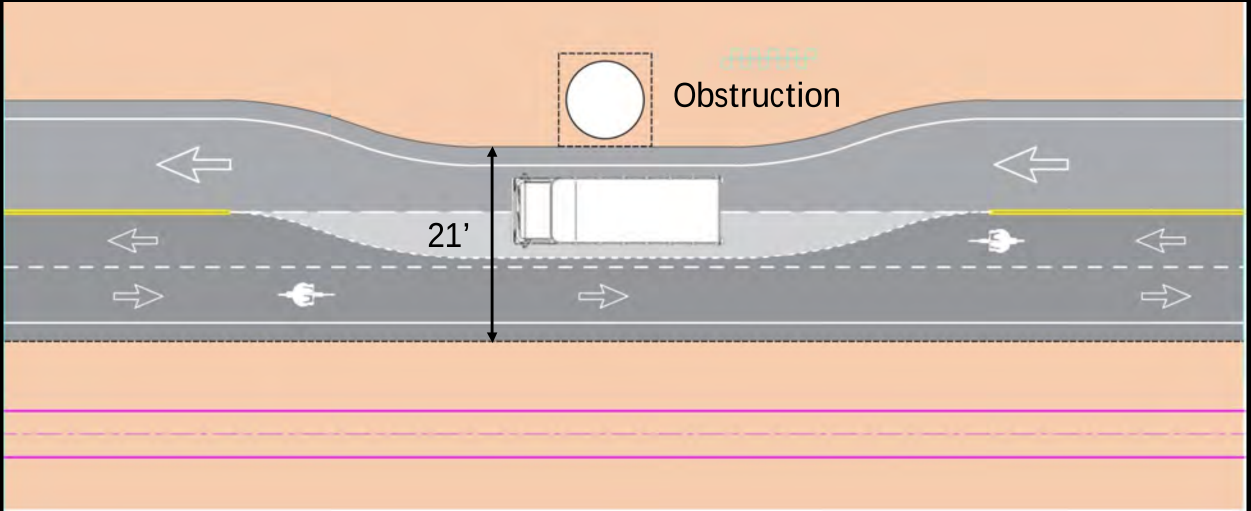
FOR INTERNAL REVIEW



10’ Drive with 2’ shoulder

12’ Path with 2’ shoulder

While there will be vehicles and path users sharing the same space a some locations, the number of occasions is not high and can be managed to some extent.



10’ Drive with 2’ shoulder

5’ Overlap at obstruction

12’ Path with 2’ shoulder

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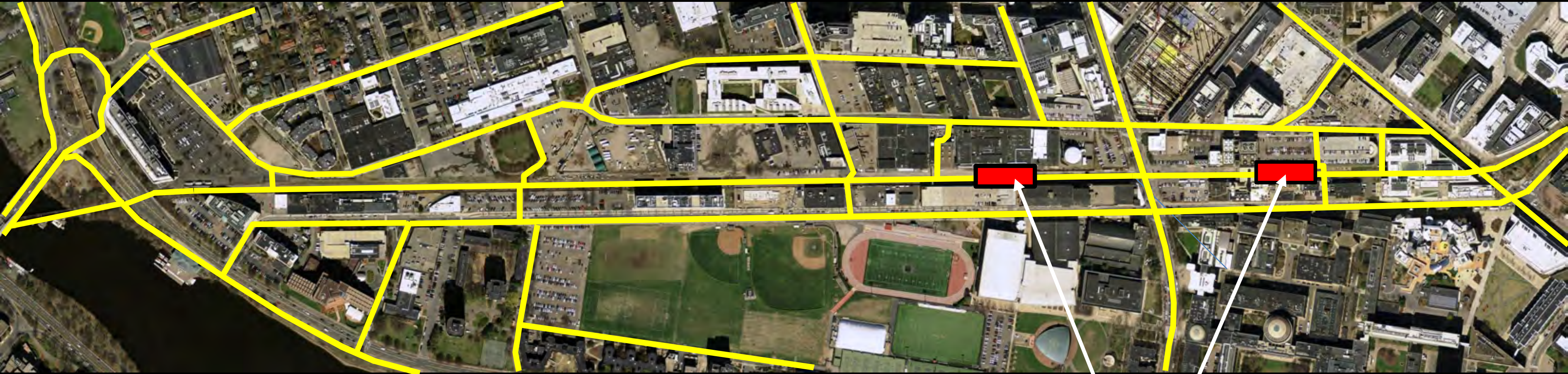
FOR INTERNAL REVIEW

Building maintenance and construction, and utility servicing and upgrades could close portions of the corridor for hours, days or months.



When portions of the Corridor are closed for construction, the links to the network around the GJ Corridor for alternate routes is important.

Potential closure for maintenance or construction

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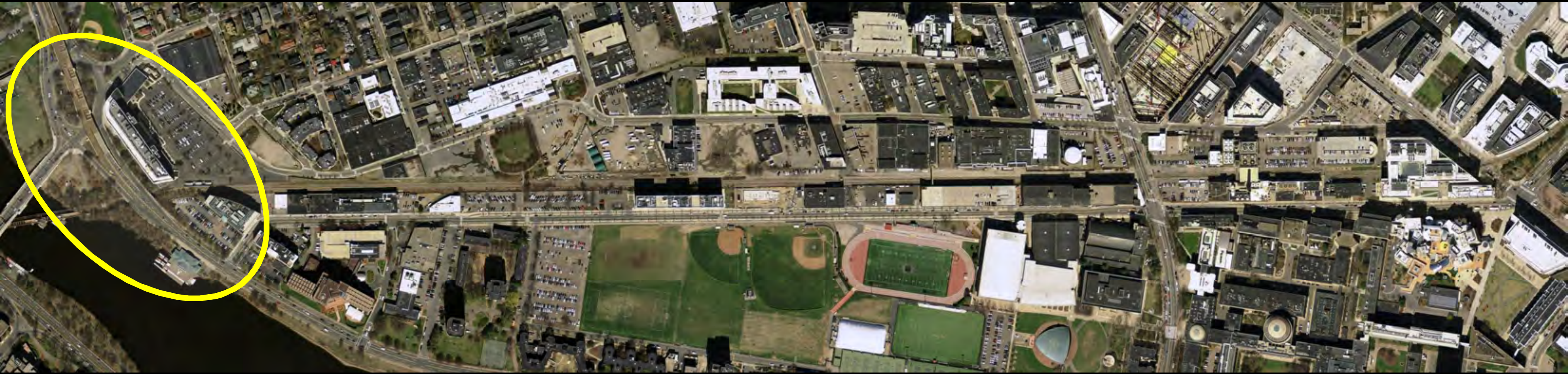
FOR INTERNAL REVIEW

Connections to the West



Connections need to be made between the GJ Corridor and the BU Bridge, Charles River paths, and eventually to Allston.

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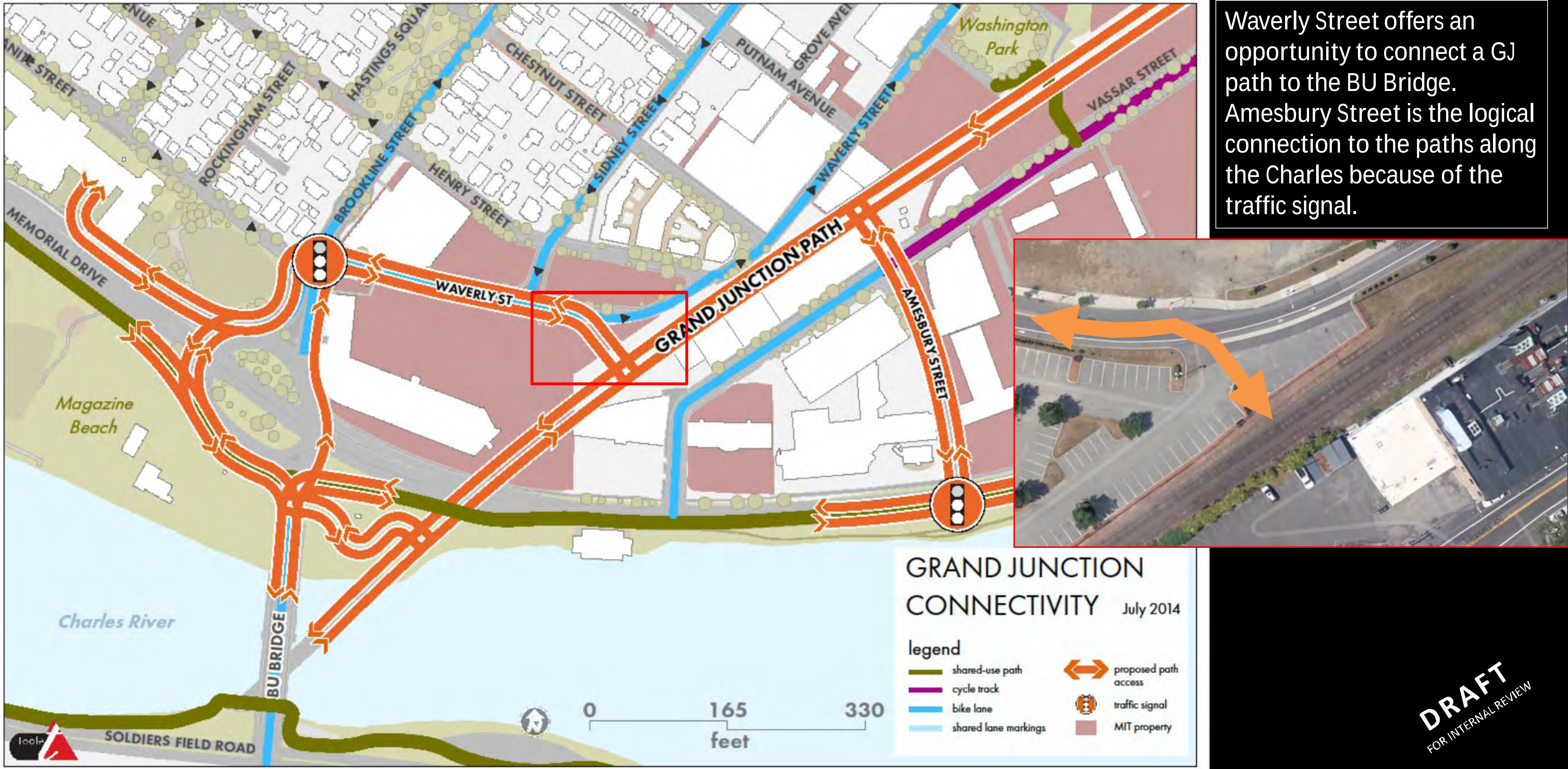
FOR INTERNAL REVIEW

Waverly Street offers an opportunity to connect a GJ path to the BU Bridge. Amesbury Street is the logical connection to the paths along the Charles because of the traffic signal.


Washington Park
GROVE AVE
PUTNAM AVENUE
CHESTNUT STREET
ROCKINGHAM STREET
BROOKLINE STREET
SIDNEY STREET
HENRY STREET
WAVERLY STREET
VASSAR STREET
MEMORIAL DRIVE
WAVERLY ST
GRAND JUNCTION PATH
AMESBURY STREET
Magazine Beach
Charles River
BU BRIDGE
SOLDIERS FIELD ROAD
GRAND JUNCTION CONNECTIVITY
July 2014
legend
shared-use path
cycle track
bike lane
shared lane markings
proposed path access
traffic signal
MIT property
0
165
330
feet

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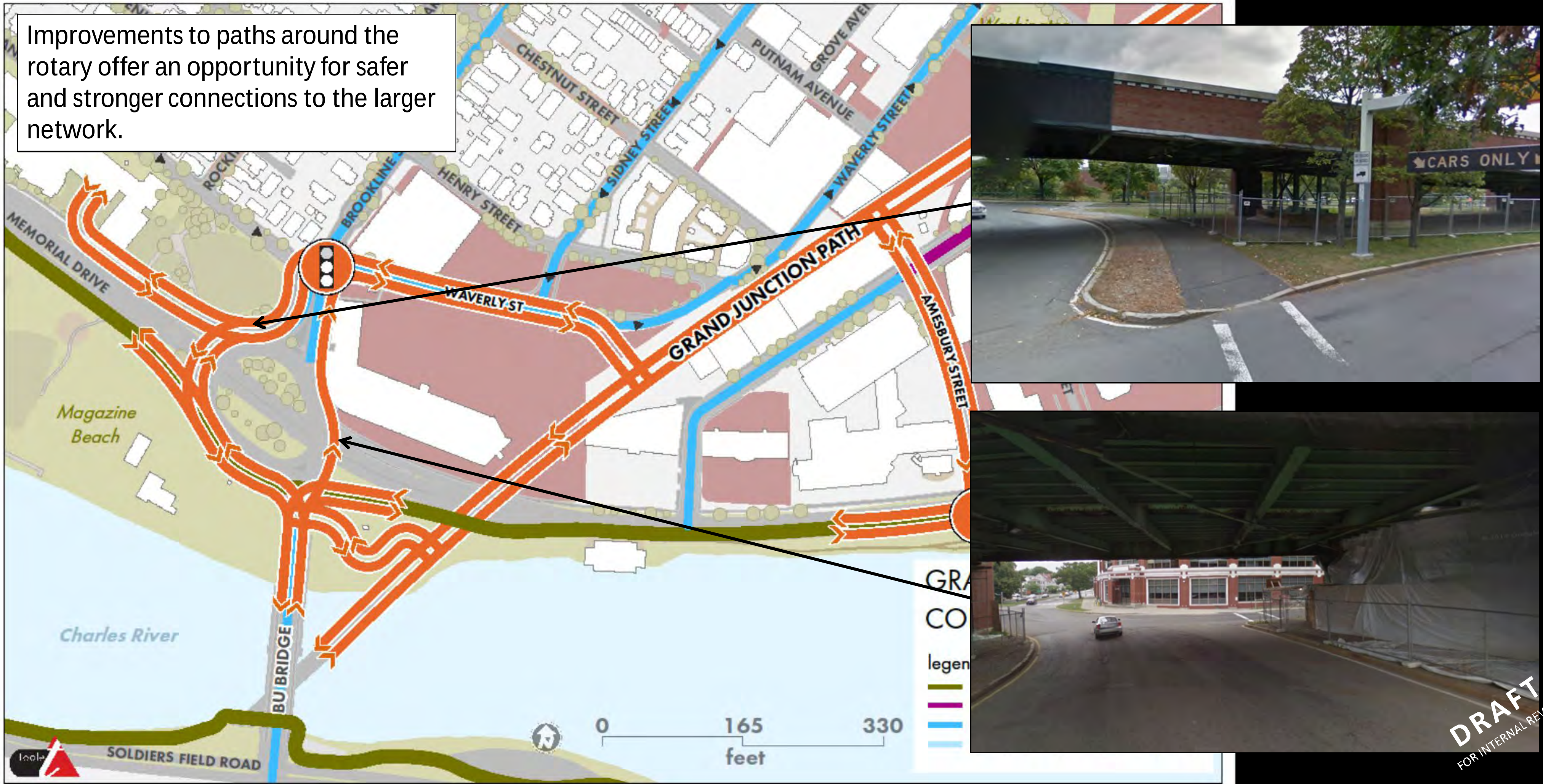
FOR INTERNAL REVIEW

Improvements to paths around the rotary offer an opportunity for safer and stronger connections to the larger network.


MEMORIAL DRIVE
ROCKI
BROOKLINE
CHESTNUT STREET
HENRY STREET
SIDNEY STREET
PUTNAM AVENUE
GROVE AVE
WAVERLY STREET
WAVERLY ST
GRAND JUNCTION PATH
AMESBURY STREET
Magazine Beach
Charles River
BU BRIDGE
SOLDIERS FIELD ROAD
0
165
330
feet
GRA
CO
legen
CARS ONLY

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FOR INTERNAL REVIEW

Crossing Mass Ave and Main Street

This portion of the presentation was discussed using handouts and is not included here.

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DRAFT FINDINGS

- The Grand Junction Corridor should be considered as a series of links in a larger network that includes Vassar, Albany and cross corridor connections
- A multi-use path can work but with some areas of conflict
- Those areas of conflict can be partially mitigated or eliminated over time
- The use of the path as a regional connector is dependent on future connections to the west and east

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NEXT STEPS

Layouts for multiuse paths and service drives

1. Main to Mass Ave with street crossings
    - North side of tracks
    - South side of tracks
    - One-way pair on either side
2. Mass Ave to Pacific with street crossings
    - North side of tracks with 10-foot offset
    - North side of tracks with 16-foot offset

Rank options with evaluation criteria

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FOR INTERNAL REVIEW

END OF SHOW

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FOR INTERNAL REVIEW

Appendix G-2

Advisory Committee Presentation

August 13, 2014

Advisory Committee Meeting

August 13, 2014

This material was presented to the Grand Junction Corridor Study Advisory Committee with a narrative supplementing the graphics included here. We have attempted to summarize the key points of that narrative as boxed text on most of the images.

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Agenda

1. Schedule and next steps
2. Review key feasibility criteria
3. Options for multi-use paths and recommendations
4. Regional connections update
5. Crossing Mass Ave and Main Street update

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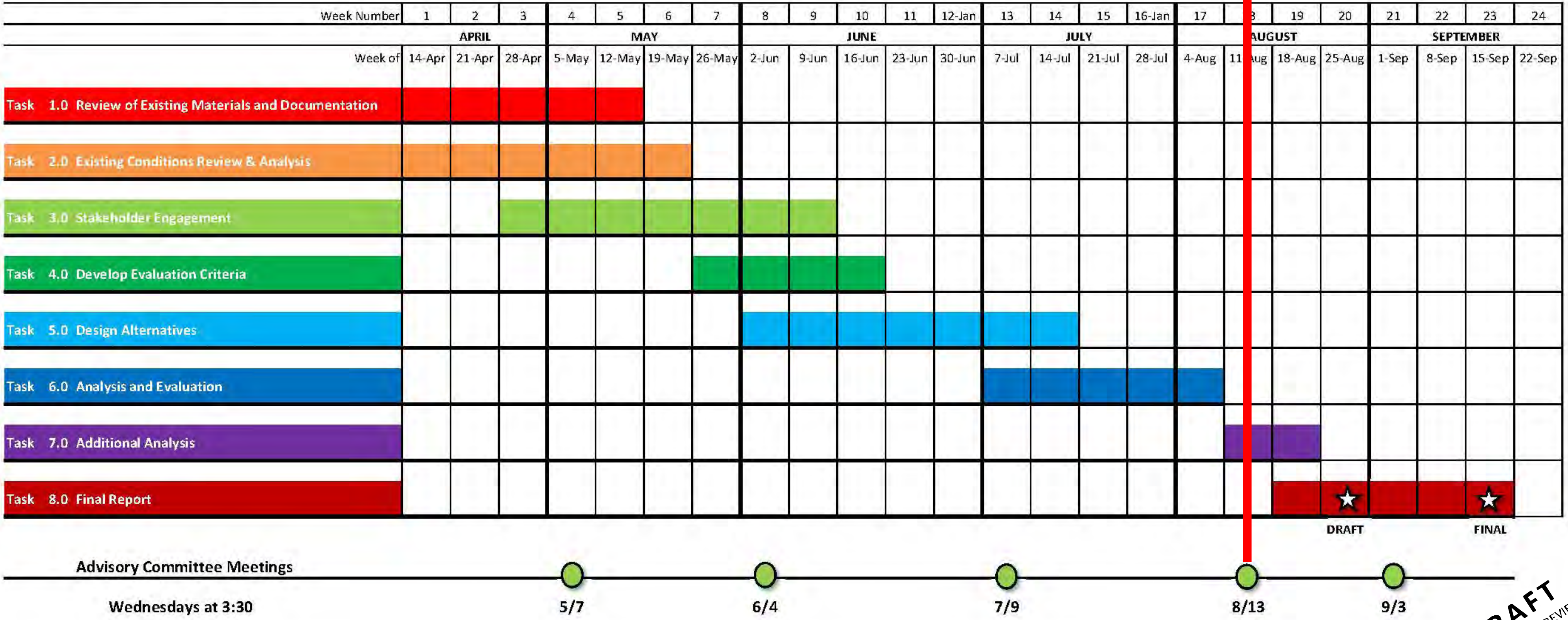
FOR INTERNAL REVIEW

MIT GRAND JUNCTION CORRIDOR FEASIBILITY STUDY

We are here



MIT Grand Junction Feasibility Study

Week Number	1	2	3	4	5	6	7	8	9	10	11	12-Jan	13	14	15	16-Jan	17	8	19	20	21	22	23	24
		APRIL			MAY				JUNE					JULY				AUGUST				SEPTEMBER		
Week of	14-Apr	21-Apr	28-Apr	5-May	12-May	19-May	26-May	2-Jun	9-Jun	16-Jun	23-Jun	30-Jun	7-Jul	14-Jul	21-Jul	28-Jul	4-Aug	11 Aug	18-Aug	25-Aug	1-Sep	8-Sep	15-Sep	22-Sep
Task 1.0 Review of Existing Materials and Documentation	🟥	🟥	🟥	🟥	🟥																			
Task 2.0 Existing Conditions Review & Analysis	🟧	🟧	🟧	🟧	🟧	🟧																		
Task 3.0 Stakeholder Engagement			🟩	🟩	🟩	🟩	🟩	🟩	🟩															
Task 4.0 Develop Evaluation Criteria							🟩	🟩	🟩	🟩														
Task 5.0 Design Alternatives								🟦	🟦	🟦	🟦	🟦	🟦	🟦										
Task 6.0 Analysis and Evaluation													🟦	🟦	🟦	🟦	🟦							
Task 7.0 Additional Analysis																		🟪	🟪					
Task 8.0 Final Report																			🟥	★	🟥	🟥	★	
																				DRAFT			FINAL	

Advisory Committee Meetings

Wednesdays at 3:30

5/7

6/4

7/9

8/13

9/3

RAFT
AL REVIEW

NEXT STEPS

August 27 - Submit DRAFT report to MIT

August 29 - Distribute DRAFT report to Advisory Committee

September 3 - Advisory Committee meeting

September 12 - Comments back to consultants

September 19 - Submit Final Report to MIT

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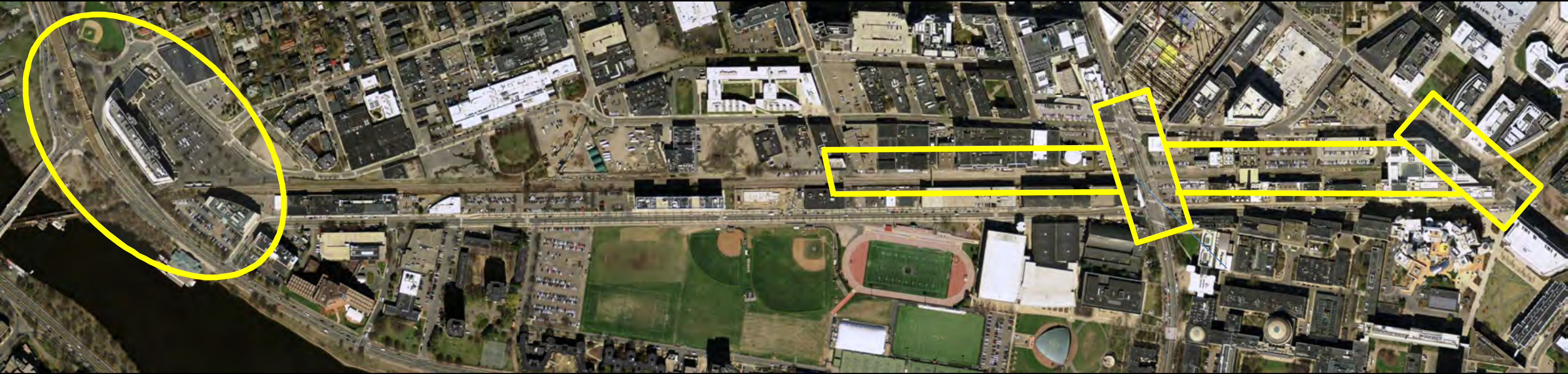
FOR INTERNAL REVIEW

Focus Areas for Today



- Corridor East and West of Mass Ave
- Connections to the West
- Crossing Mass Ave and Main St

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FOR INTERNAL REVIEW

What Determines Feasibility

- The amount of space available in the corridor for both bicycles and service vehicles – minimizing areas of conflict
- The frequency of bicycle and service vehicle trips and ability to manage potential conflict
- The location and length of time for construction activities that would block segments of the corridor

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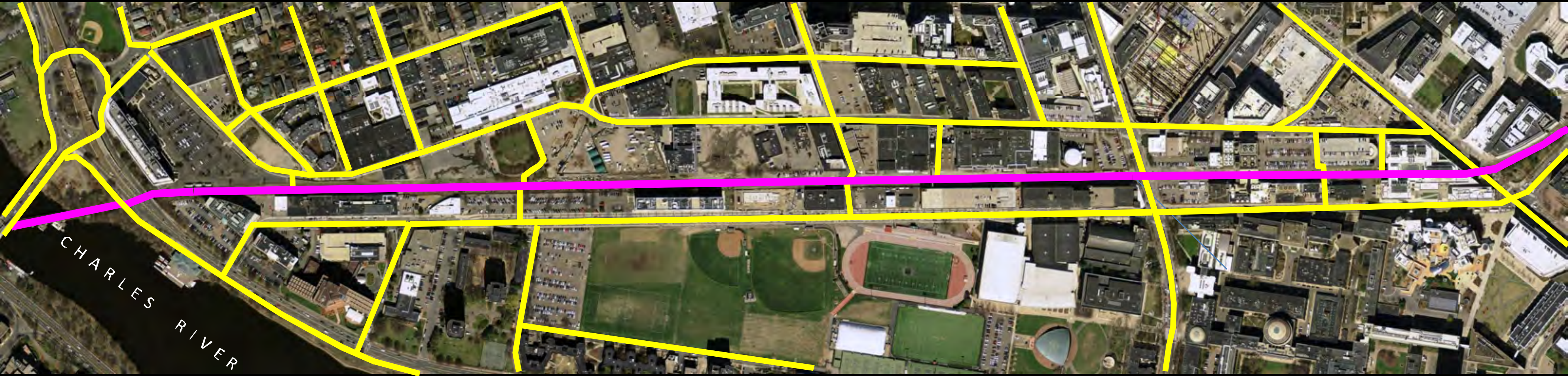
The corridor is part of a larger network



While some trips may use the Grand Junction Corridor exclusively, most will use segments of it as part of their trip.

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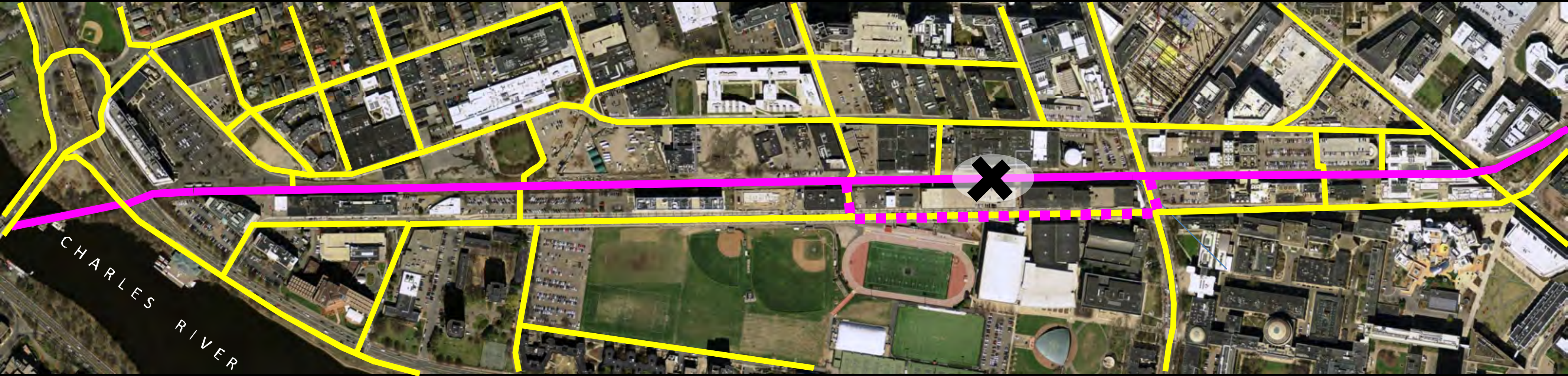
When segments are closed, alternative routes like Vassar St. are available



Building and utility construction and maintenance on the MIT campus is constant and will require closures of segments of the corridor. The existing cycle track on Vassar Street is the most obvious alternate route.

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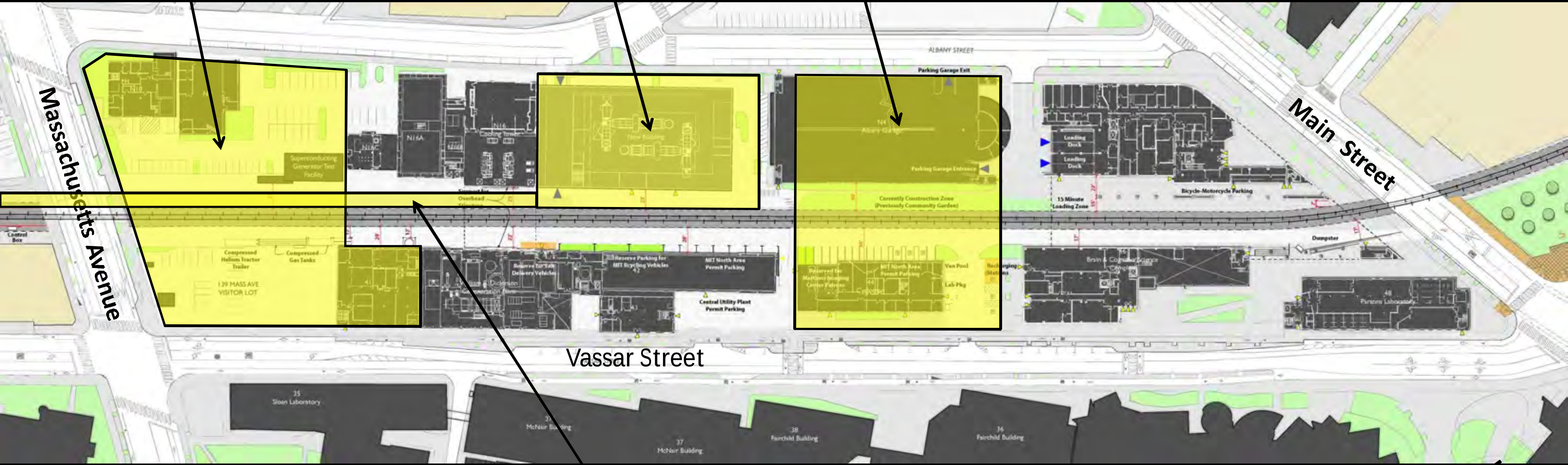
FOR INTERNAL REVIEW


Massachusetts Avenue
Main Street
Vassar Street
ALBANY STREET
Parking Garage Exit
Parking Garage Entrance
Currently Construction Zone (Previously Community Garden)
Loading Dock
Loading Dock
15 Minute Loading Zone
Bicycle-Motorcycle Parking
Dumpster
Compressed Helium Tractor Trailer
Compressed Gas Tanks
139 MASS AVE VISITOR LOT
Superconducting Generator Test Facility
Reserve Parking for MIT Bicycling Vehicles
MIT North Area Permit Parking
Central Utility Plant Permit Parking
Van Pool
Lab Pkg
35 Sloan Laboratory
37 McNair Building
38 Fairchild Building
36 Fairchild Building
48 Parsons Laboratory

Prime development site on Mass Ave frontage

Co-generation plant expansion (2015-2017)

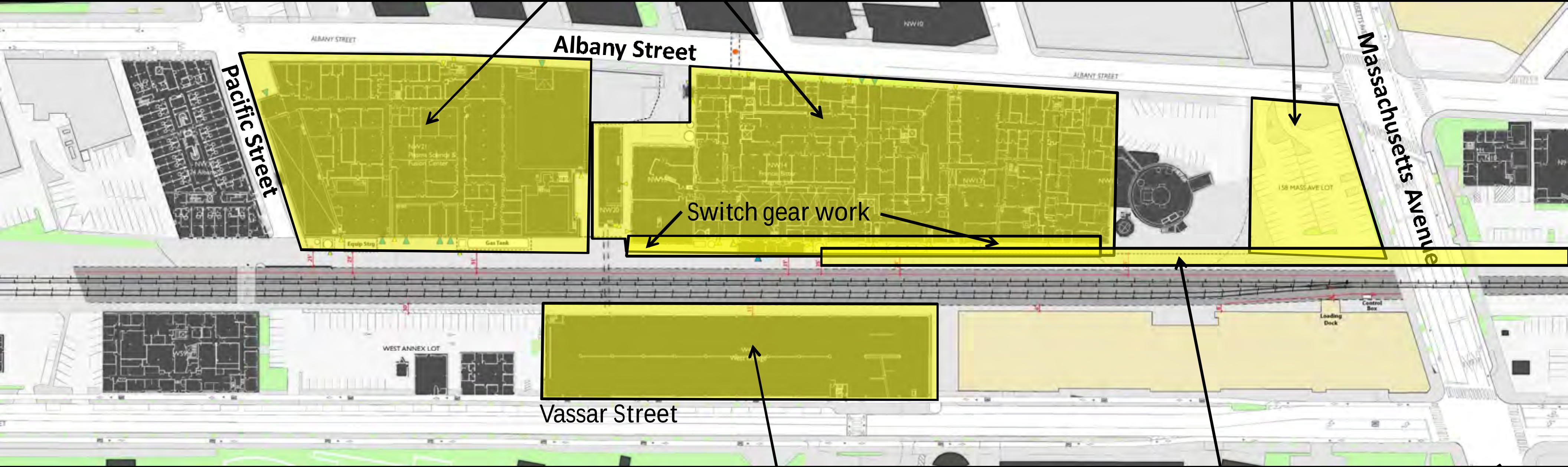
Future redevelopment of Albany Street garage and Building 44

Construction of buildings along and over the corridor would require corridor closures.

New utility line between NW14 and co-generation plant (2016)

Ongoing rehabilitation to Buildings NW12 to NW 21

Future 156 Mass Ave redevelopment

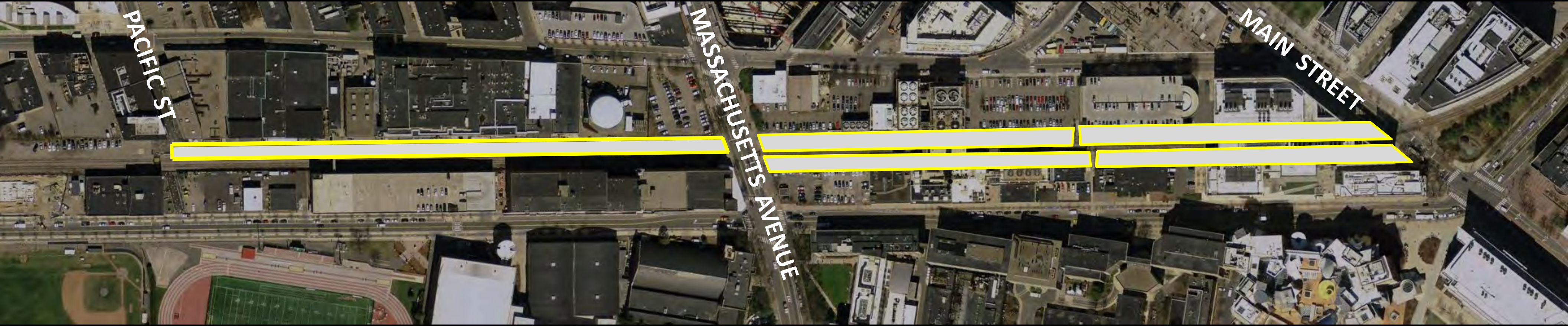

Albany Street
Pacific Street
Massachusetts Avenue
Switch gear work
Vassar Street
ALBANY STREET
NW10
WEST ANNEX LOT
158 MASS AVE LOT
Control Box
Loading Dock

New construction and rehabilitation of buildings, along with utility construction and maintenance, would require closures.

West Garage redevelopment

New utility line between NW14 and co-generation plant (2016)

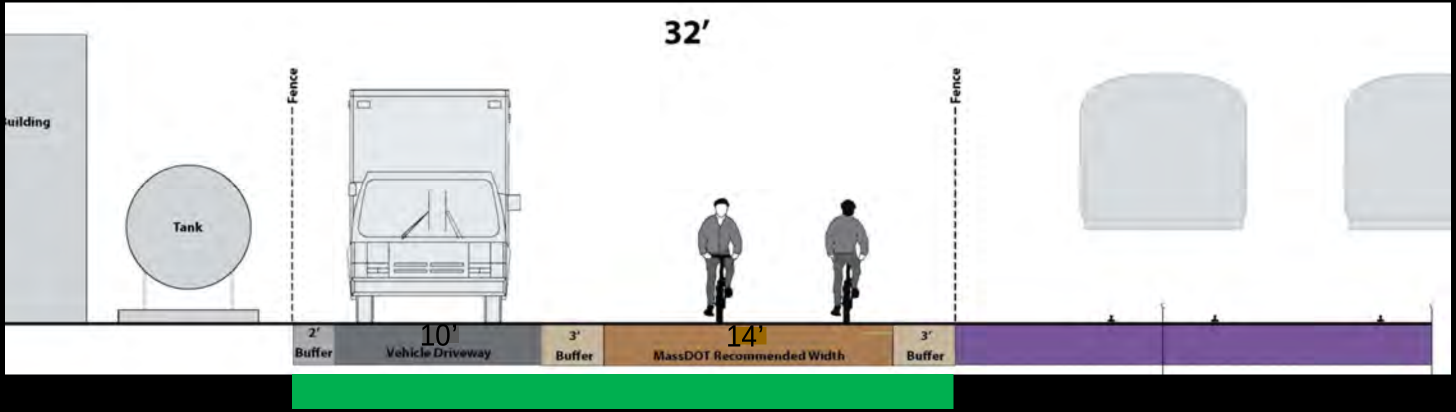
SPACE AVAILABLE IN THE CORRIDOR


PACIFIC ST
MASSACHUSETTS AVENUE
MAIN STREET

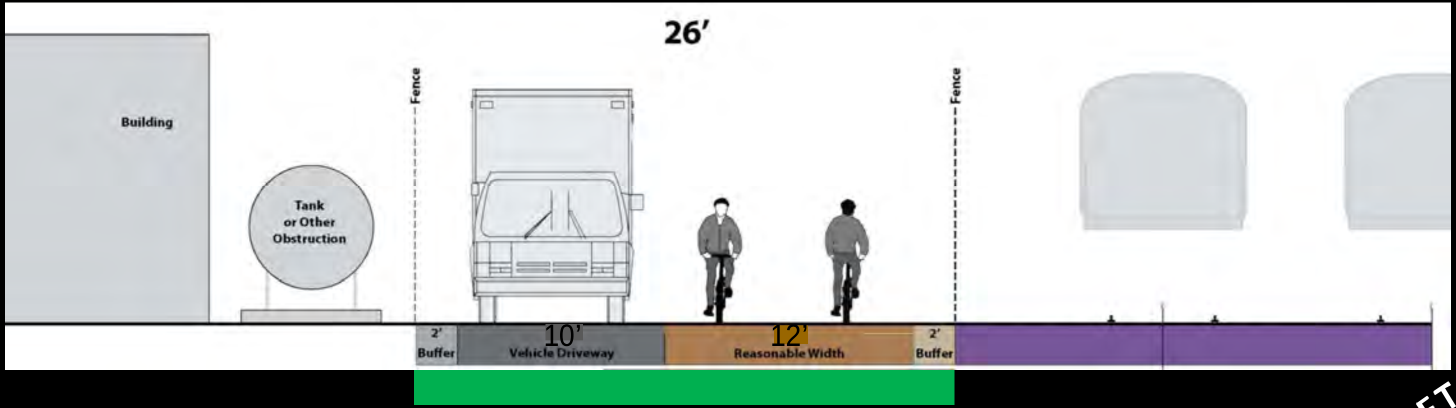
The corridor breaks down into a series of segments defined by access points. West of Mass Ave there is not room for a path on the south side of the tracks.

DRAFT
FOR INTERNAL REVIEW

Using the recommended MassDOT standard we need a combined width of 32 feet for a side-by-side multi-use path and service drive—including buffers. This amount of space is not available along much of the corridor.

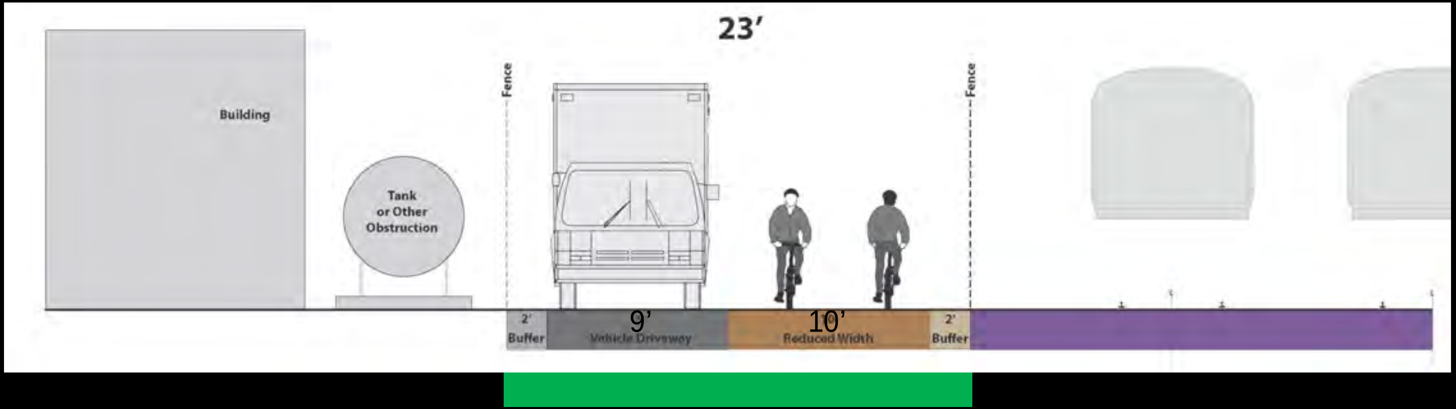

32'
uilding
Tank
Fence
Fence
2' Buffer
10' Vehicle Driveway
3' Buffer
14' MassDOT Recommended Width
3' Buffer

A more practical dimension would be 26 feet which has a 12-foot rather than a 14-foot path and narrows or removes the buffers.

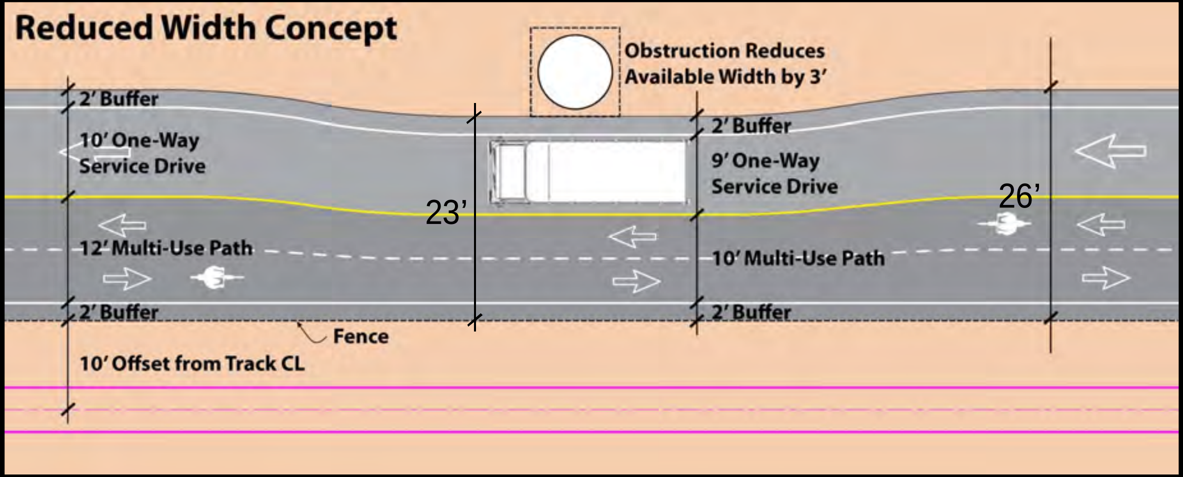

26'
Building
Tank or Other Obstruction
Fence
Fence
2' Buffer
10' Vehicle Driveway
12' Reasonable Width
2' Buffer

DRAFT
FOR INTERNAL REVIEW

There are lengths of the corridor that are slightly below the 26-foot width—23 or 24 feet—and to minimize overlap we have used a 9-foot service drive with a 10-foot multi-use path.


23’
Building
Tank or Other Obstruction
Fence
Fence
2’ Buffer
9’ Vehicle Driveway
10’ Reduced Width
2’ Buffer

23 to 26 feet


Reduced Width Concept
Obstruction Reduces Available Width by 3’
2’ Buffer
10’ One-Way Service Drive
12’ Multi-Use Path
2’ Buffer
Fence
10’ Offset from Track CL
23’
2’ Buffer
9’ One-Way Service Drive
10’ Multi-Use Path
2’ Buffer
26’

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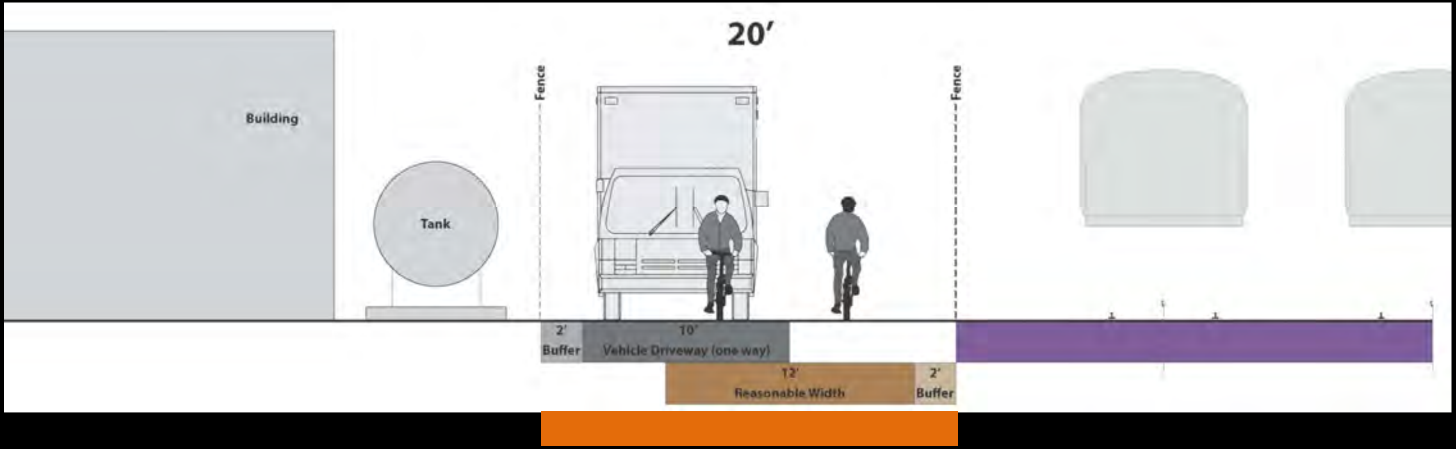
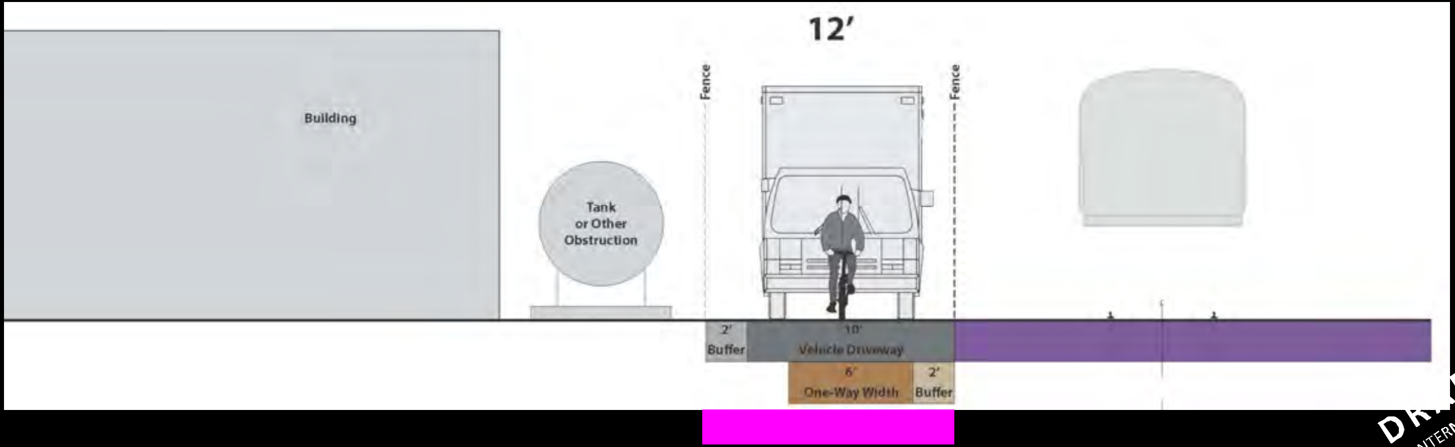
FOR INTERNAL REVIEW

Where 23 feet is not available, the service drive will overlap with the multi-use path. For an overlap of less than 6 feet the vehicles and path users move in the same direction. When the overlap is greater than 6 feet vehicles move against path users from the opposite direction.


20′
Building
Tank
Fence
Fence
2′
Buffer
10′
Vehicle Driveway (one way)
12′
Reasonable Width
2′
Buffer

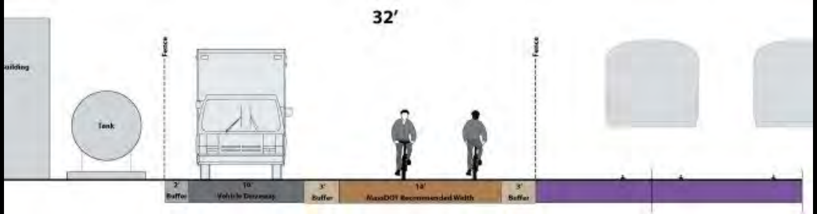
There are several locations within the corridor that fall below the 20-foot dimension and only a one-way path would be practical.


12′
Building
Tank
or Other
Obstruction
Fence
Fence
2′
Buffer
10′
Vehicle Driveway
6′
One-Way Width
2′
Buffer

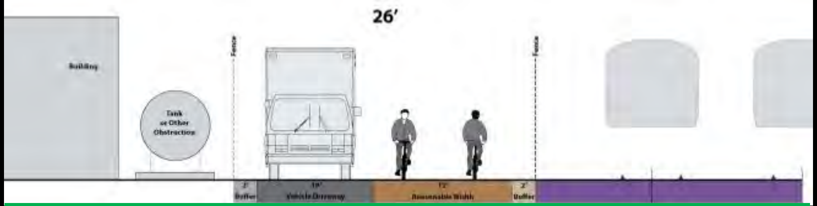
DRAFT
FOR INTERNAL REVIEW

Corridor Width – Color Key

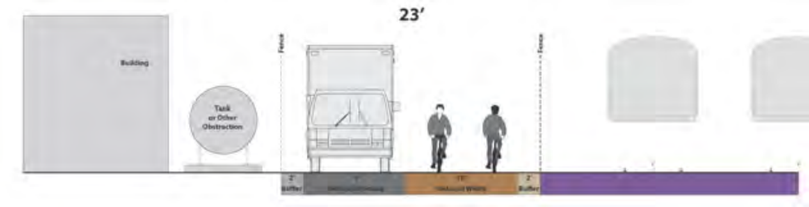
No Overlap


32'
Building
Tank
Fence
Fence
2' Buffer
10' Vehicle Driveway
3' Buffer
14' MassDOT Recommended Width
3' Buffer

32' or more

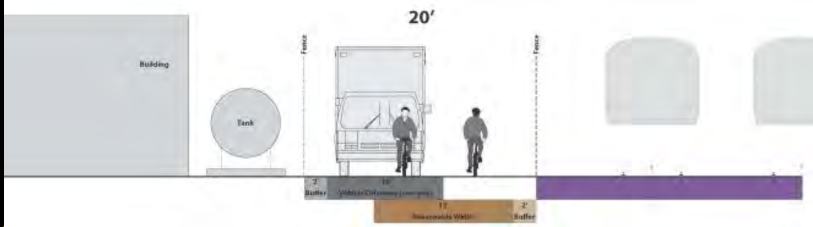

26'
Building
Tank or Other Obstruction
Fence
Fence
2' Buffer
10' Vehicle Driveway
12' Reasonable Width
2' Buffer

32' - 26'


23'
Building
Tank or Other Obstruction
Fence
Fence
2' Buffer
2' Buffer

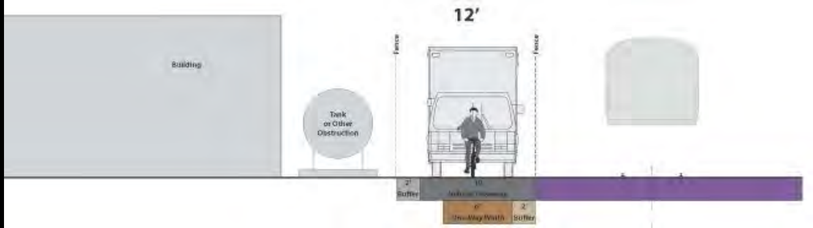
26' – 23'

Overlap if 20' or greater


20'
Building
Tank
Fence
Fence
2' Buffer
10' Vehicle Driveway
12' Reasonable Width
2' Buffer

23' - 20'

Overlap if less than 20'

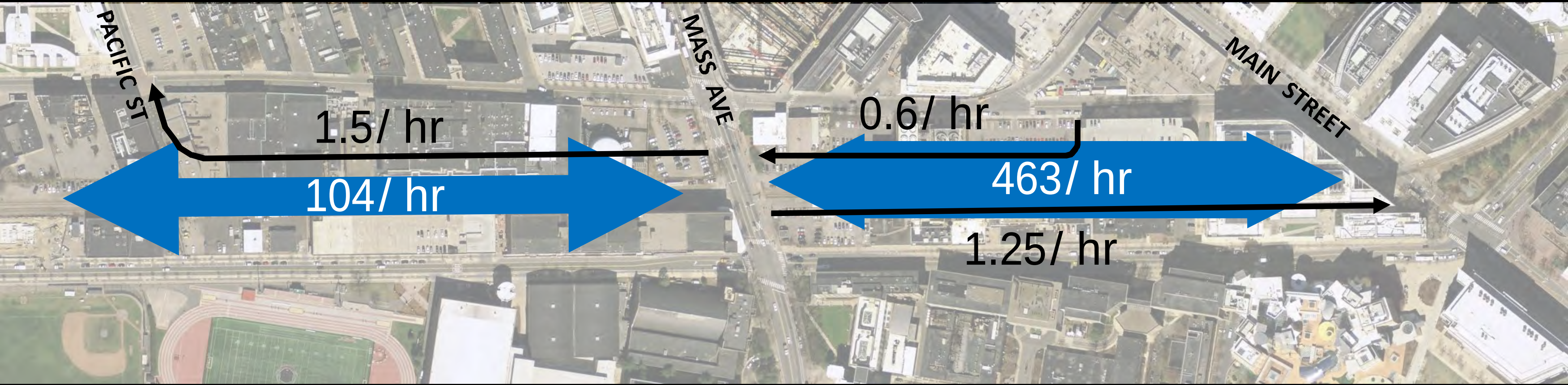

12'
Building
Tank or Other Obstruction
Fence
Fence
2' Buffer
10' Vehicle Driveway
2' Buffer

20' or less if two-way

Where the available width is 23 feet or greater, the service drive and multi-use path can be reduced to prevent overlapping. Where the width less than 23 feet but not less than 20 feet, the vehicle overlaps the bicycle lane in the same direction.

DRAFT
FOR INTERNAL REVIEW

Service Vehicle and Bicycle Trips by Corridor Segment


PACIFIC ST
MASS AVE
MAIN STREET
1.5/ hr
104/ hr
0.6/ hr
463/ hr
1.25/ hr

The number of bicycle trips expected on the Grand Junction corridor is unknown so we used the peak-hour volumes on Vassar Street as a starting point. These volumes are shown on the blue arrows.

The number of service vehicle trips in the corridor is low, however service vehicles may stop along the corridor for loading or other activities.

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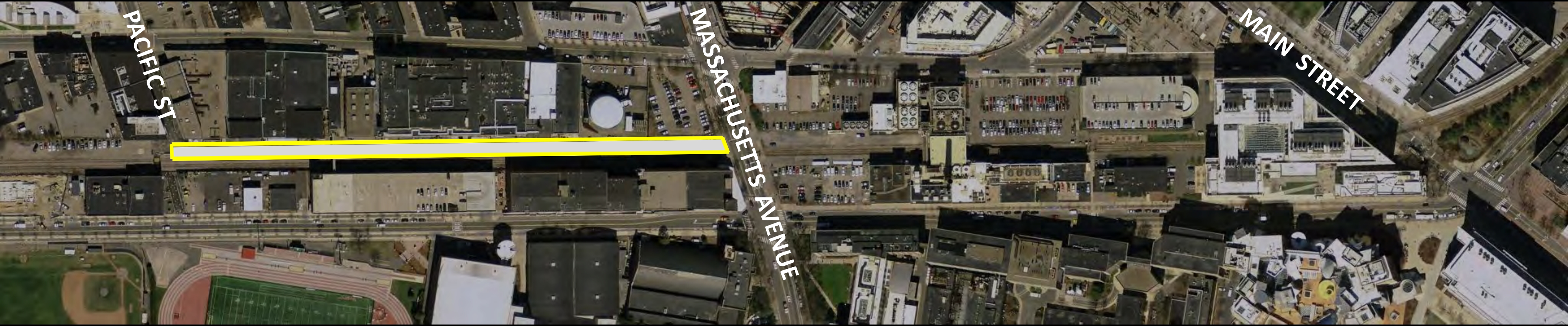
FOR INTERNAL REVIEW

Potential Mitigations for Service Vehicle Conflicts

1. One-way movement on service drive
2. Off-peak delivery & service
3. Defined parking locations
4. Warning signs & striping
5. Low speed limit

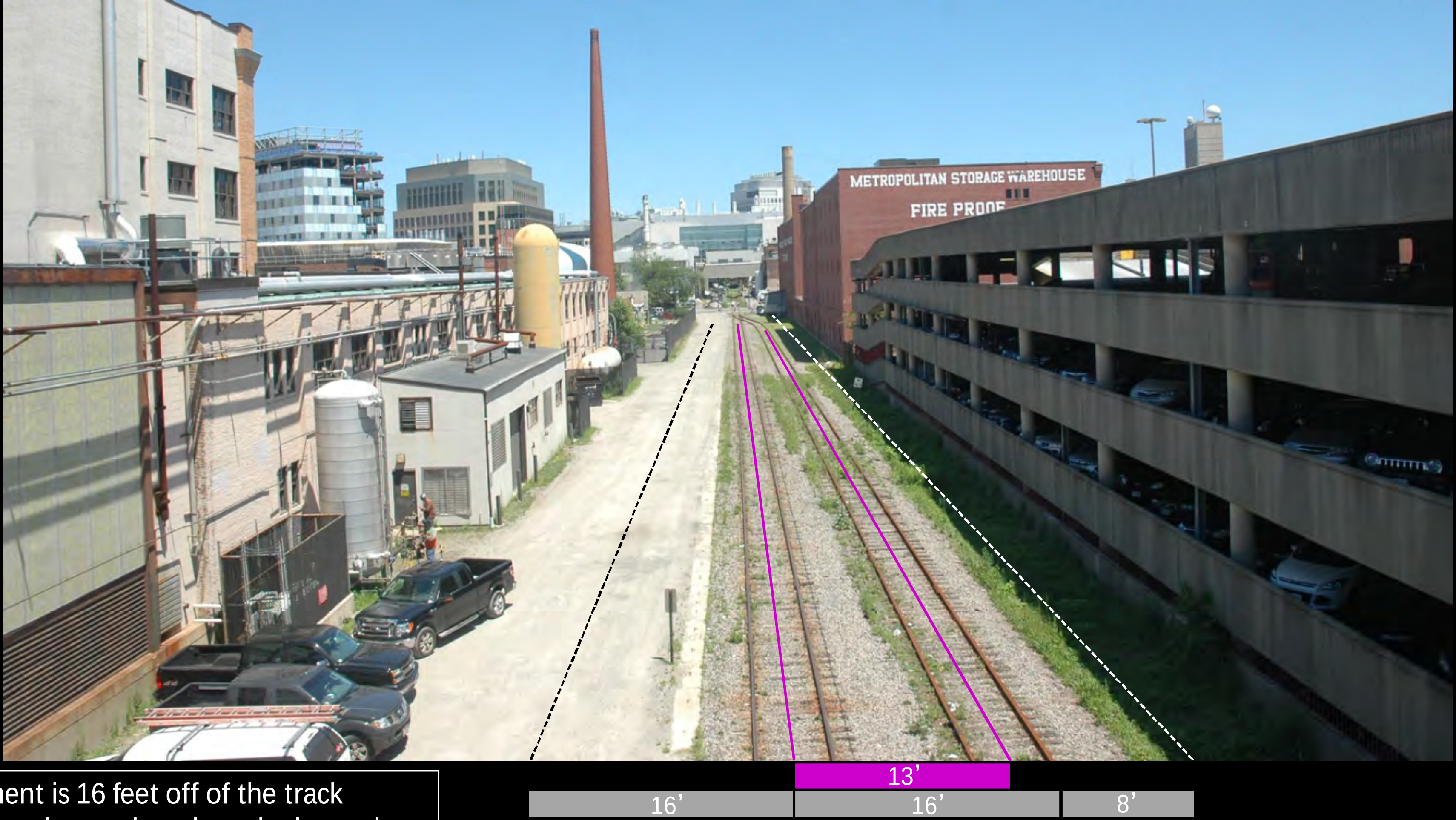
DRAFT
FOR INTERNAL REVIEW

OPTIONS WEST OF MASS AVE


PACIFIC ST
MASSACHUSETTS AVENUE
MAIN STREET

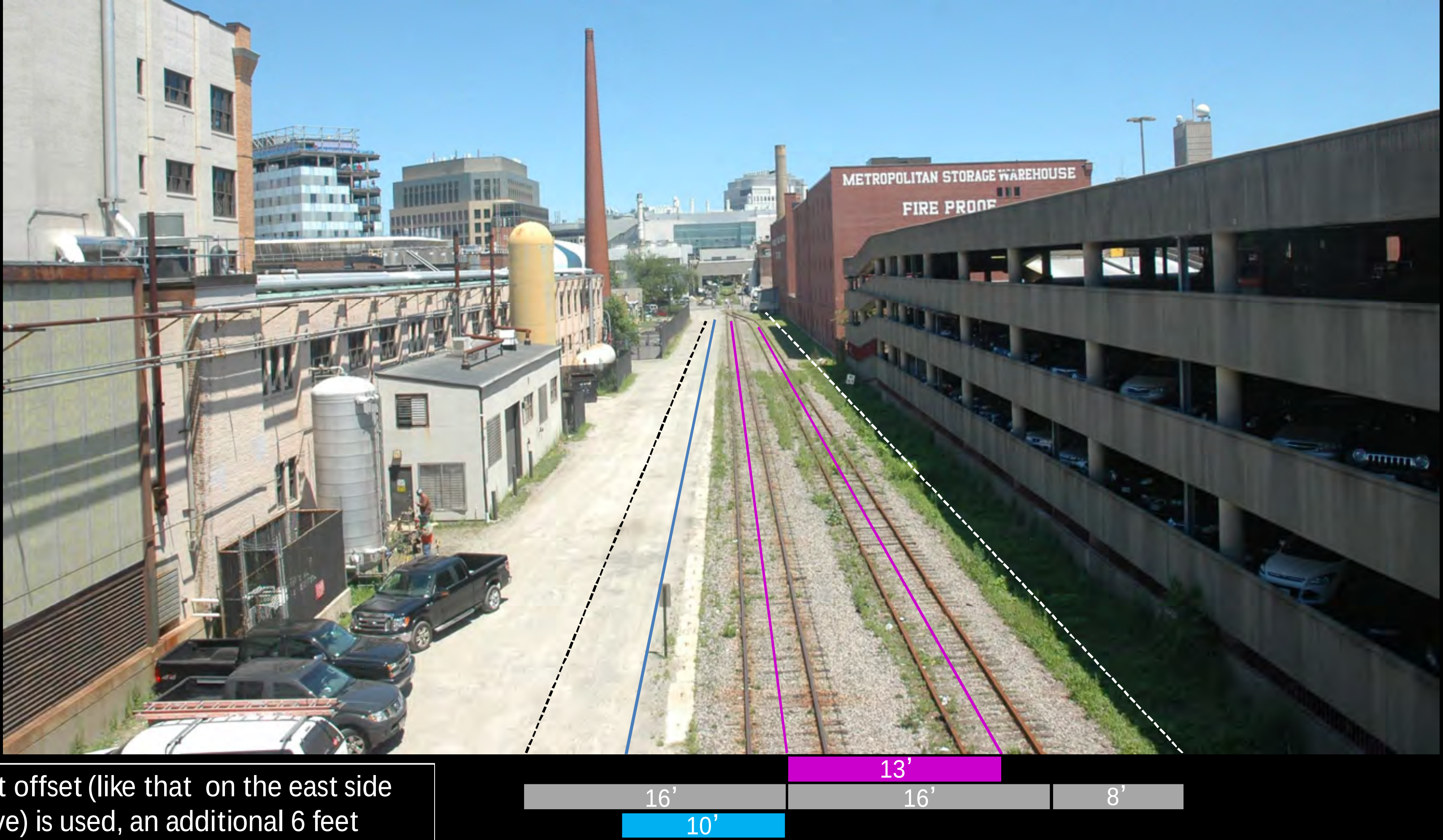
There is only one segment on the north side of the tracks.

DRAFT
FOR INTERNAL REVIEW


METROPOLITAN STORAGE WAREHOUSE
FIRE PROOF
13’
16’
16’
8’

The easement is 16 feet off of the track centerline to the north and south plus and additional 8 feet on the south side.

DRAFT
FOR INTERNAL REVIEW


METROPOLITAN STORAGE WAREHOUSE
FIRE PROOF
13'
16'
16'
8'
10'

If a 10-foot offset (like that on the east side of Mass Ave) is used, an additional 6 feet could be gained.

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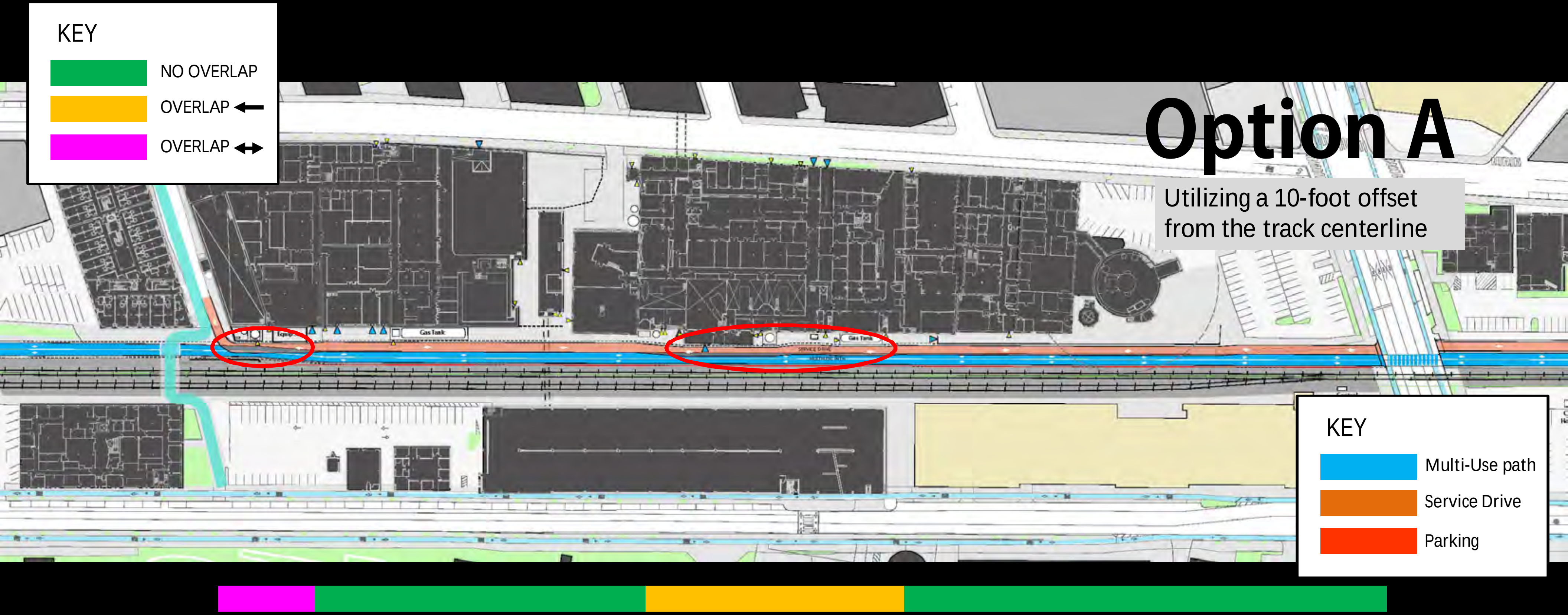
FOR INTERNAL REVIEW

MIT GRAND JUNCTION CORRIDOR FEASIBILITY STUDY

Option A

Utilizing a 10-foot offset from the track centerline



KEY

- 🟩 NO OVERLAP
- 🟨 OVERLAP ←
- 🟪 OVERLAP ↔

KEY

- 🟦 Multi-Use path
- 🟧 Service Drive
- 🟥 Parking

Option A is the preferred option west of Mass Ave. There is minimal overlap of the service drive with the multi-use path.

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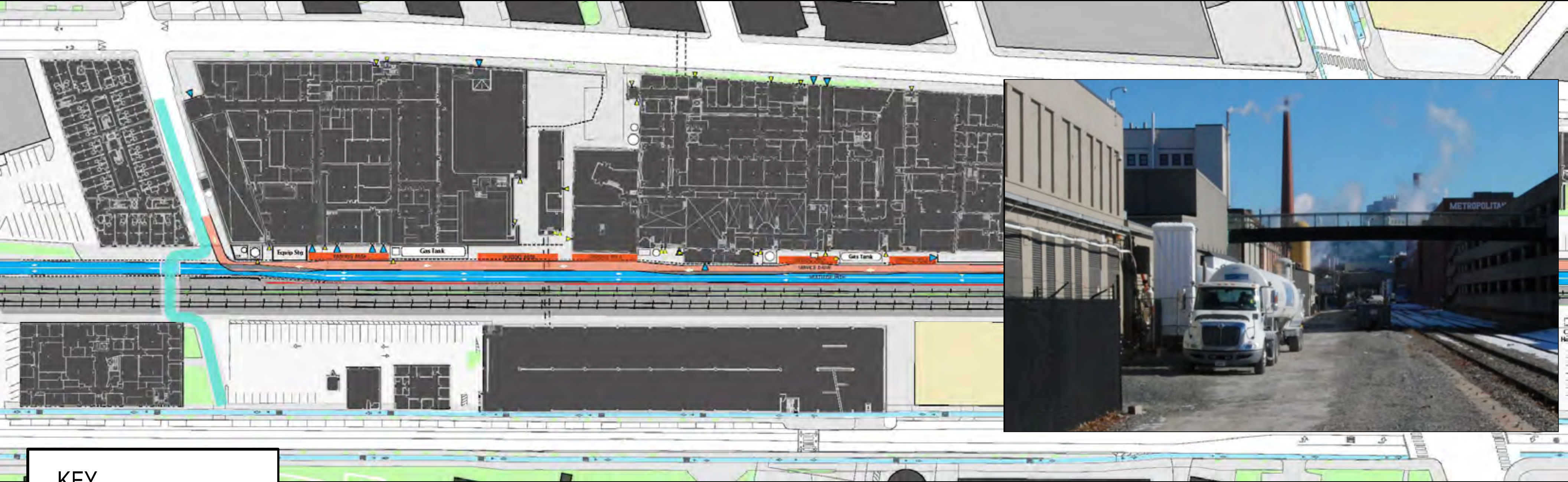
FOR INTERNAL REVIEW


Equip Stg
Gas Tank
Gas Tank
METROPOLITAN

KEY

🟦 Multi-Use path
🟧 Service Drive
🟥 Parking

Option A provides space for parking off of the service drive. However, vehicles that need to park adjacent to the gas storage tanks would temporarily block the drive.

Option B

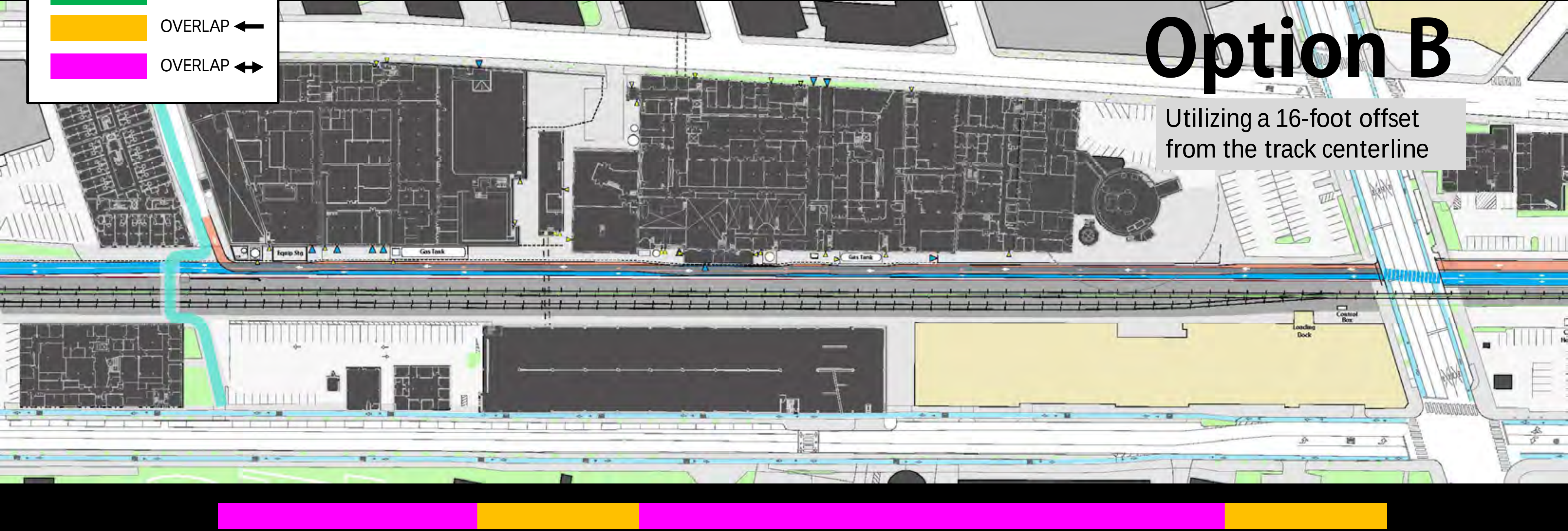
Utilizing a 16-foot offset from the track centerline

KEY

🟩 NO OVERLAP

🟨 OVERLAP ←

🟪 OVERLAP ↔


Equip Stg
Gas Tank
Gas Tank
Control Box
Loading Dock

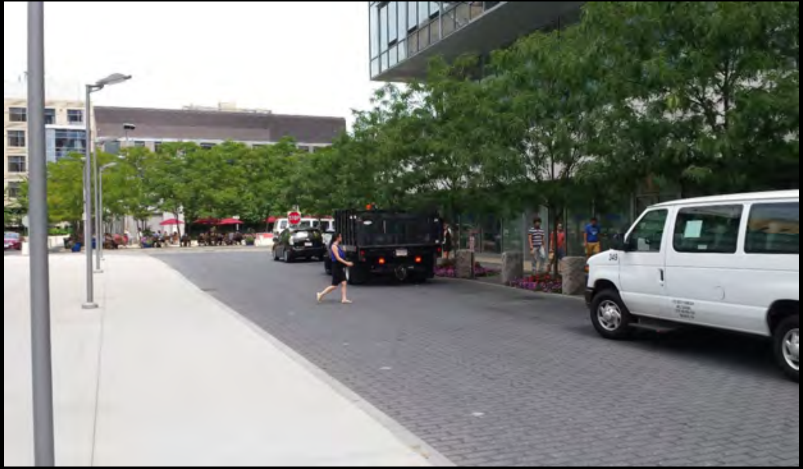
Option B, which locates the multi-use path outside of the 16-foot easement, has continuous overlap of the service drive and path and would be treated as a shared street.

Bicycle-Pedestrian-Vehicle Conflicts

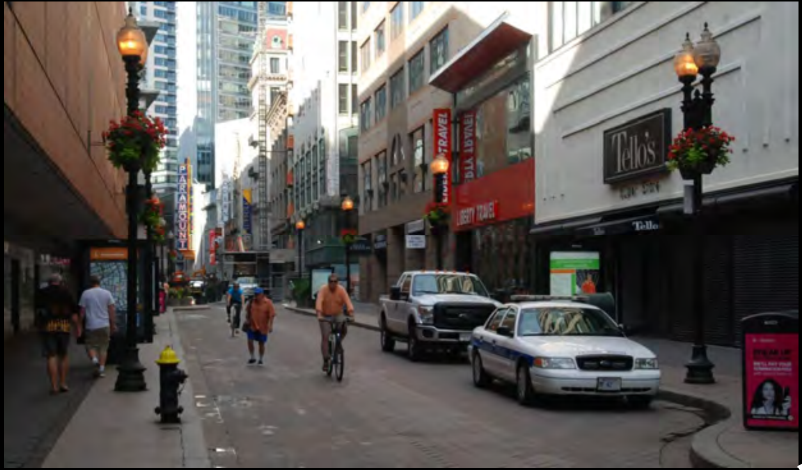
In locations where bicycles, pedestrians and vehicles will need to use the same surface

Think of it as a shared street

Service drive off Athenaeum Street



Washington Street at Downtown Crossing



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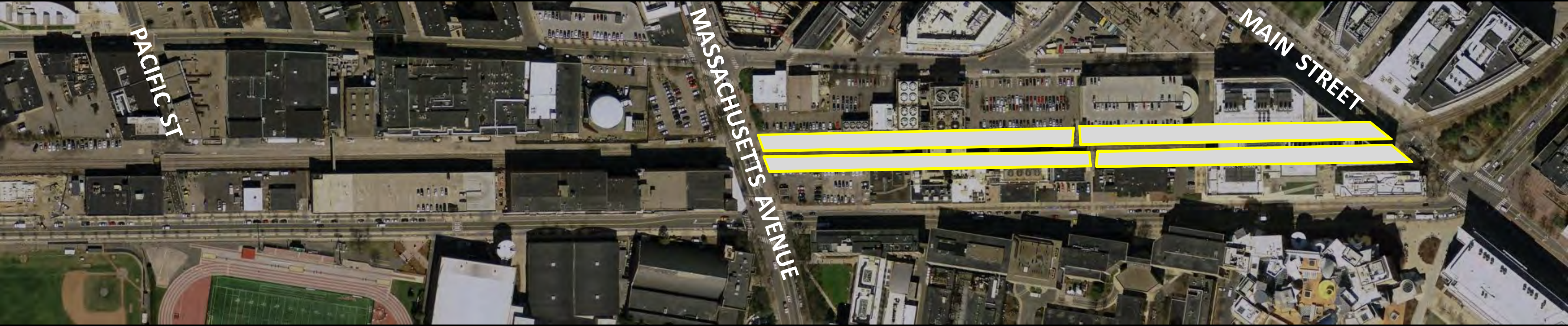
FOR INTERNAL REVIEW

OPTIONS EAST OF MASS AVE


PACIFIC ST
MASSACHUSETTS AVENUE
MAIN STREET

There are four segments: north and south of the tracks and east and west of the Albany Garage crossing

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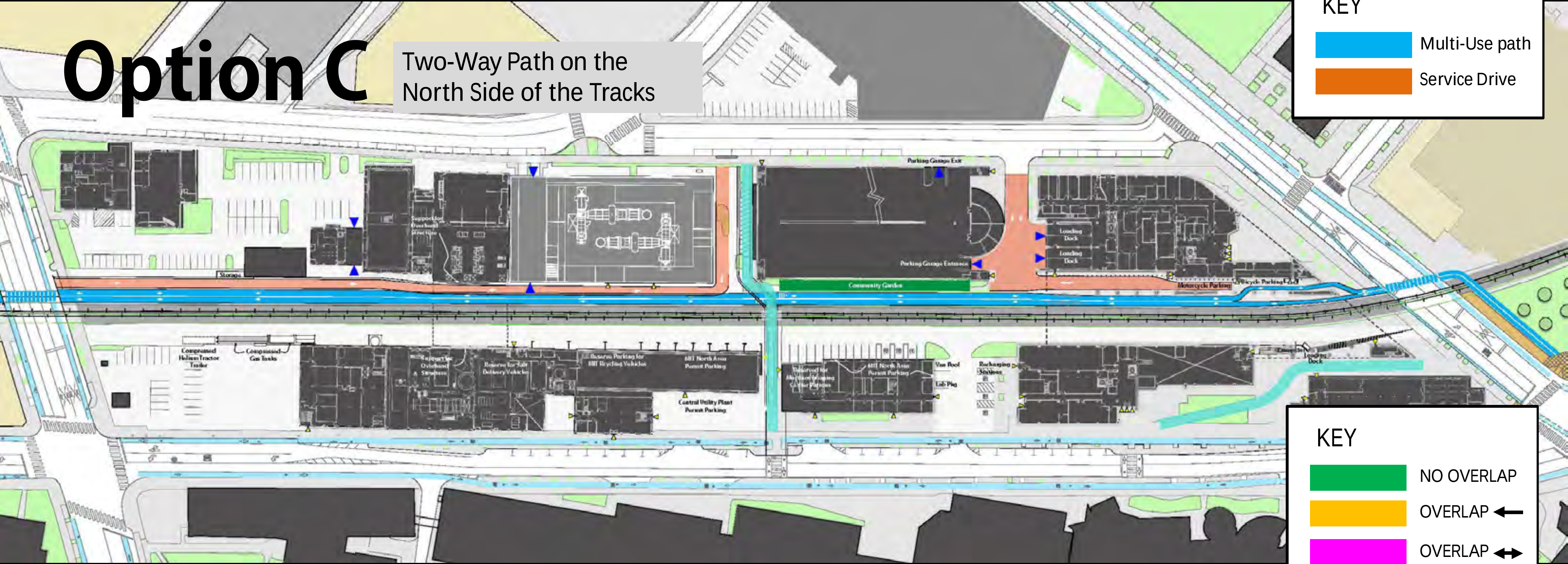
Option C

Two-Way Path on the North Side of the Tracks


Storage
Supports for Overhead Structure
Parking Garage Exit
Parking Garage Entrance
Community Garden
Loading Dock
Loading Dock
Motorcycle Parking
Bicycle Parking
Compressed Helium Tractor Trailer
Compressed Gas Tanks
Supports for Overhead Structure
Reserve for Safe Delivery Vehicles
Reserve Parking for MIT Recycling Vehicles
MIT North Area Permit Parking
Central Utility Plant Permit Parking
Reserved for Martinson Imaging Center Patients
MIT North Area Permit Parking
Van Pool
Lab Pkg
Recharging Stations
Dumpster
Loading Dock

KEY

🟦 Multi-Use path

🟧 Service Drive

KEY

🟩 NO OVERLAP

🟨 OVERLAP ←

🟪 OVERLAP ↔

There is no overlap of the service drive and the multi-use path

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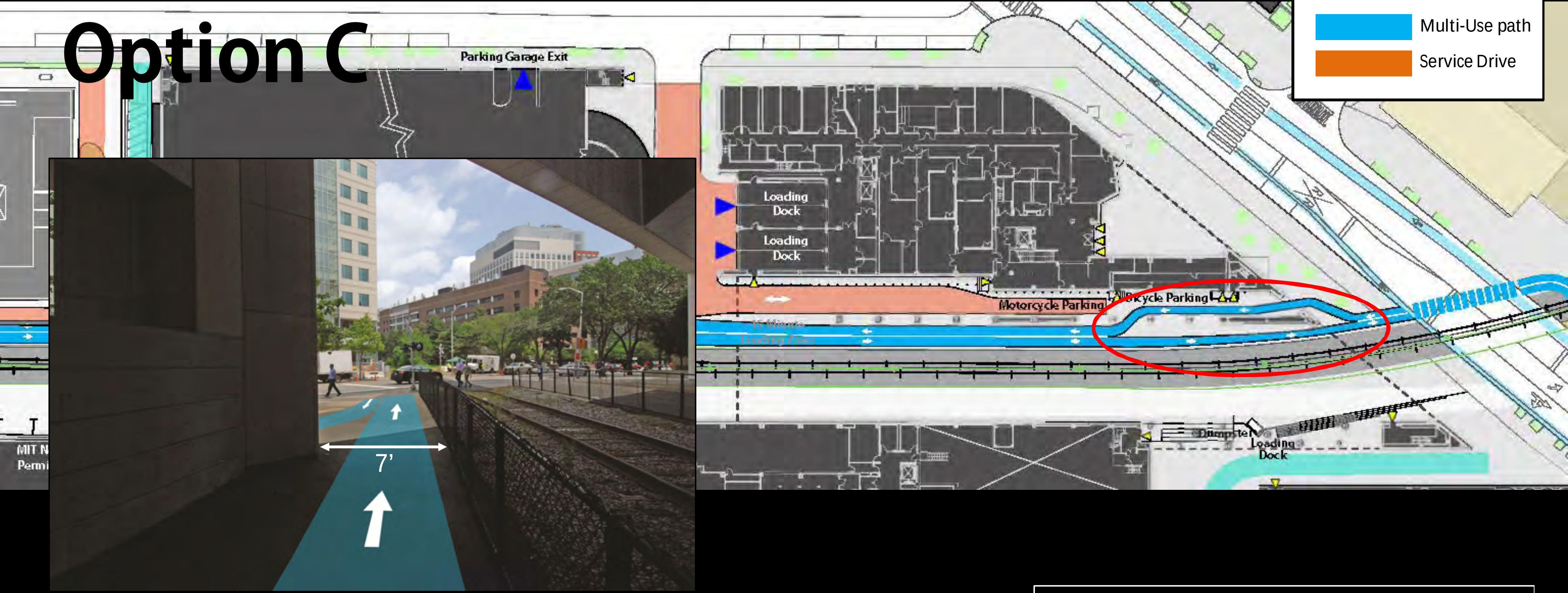
FOR INTERNAL REVIEW

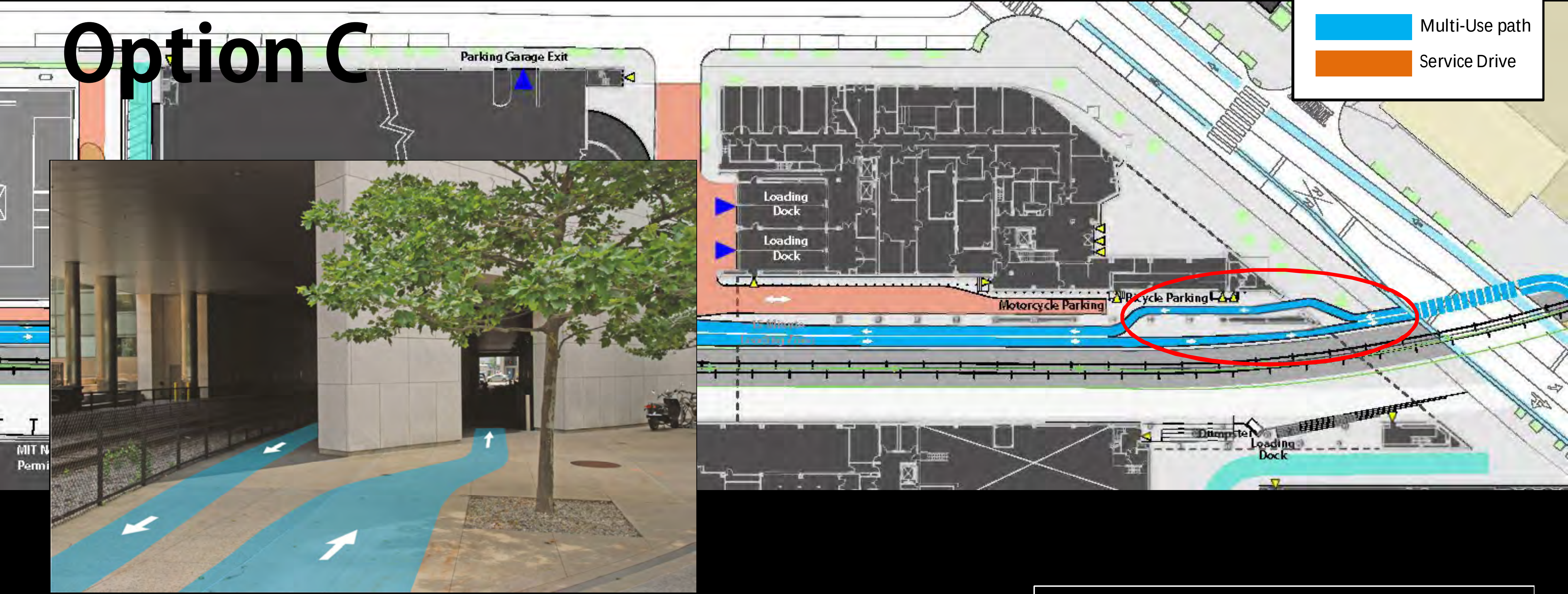
Option C


KEY
Multi-Use path
Service Drive
Parking Garage Exit
Loading Dock
Loading Dock
Motorcycle Parking
Bicycle Parking
Dumpster
Loading Dock
MIT N
Permi
7'

Exiting from under the Brain & Cog Building to Main Street

The path needs to split into a one-way pair as it transitions from under the Brain & Cog building to Main Street.

Option C

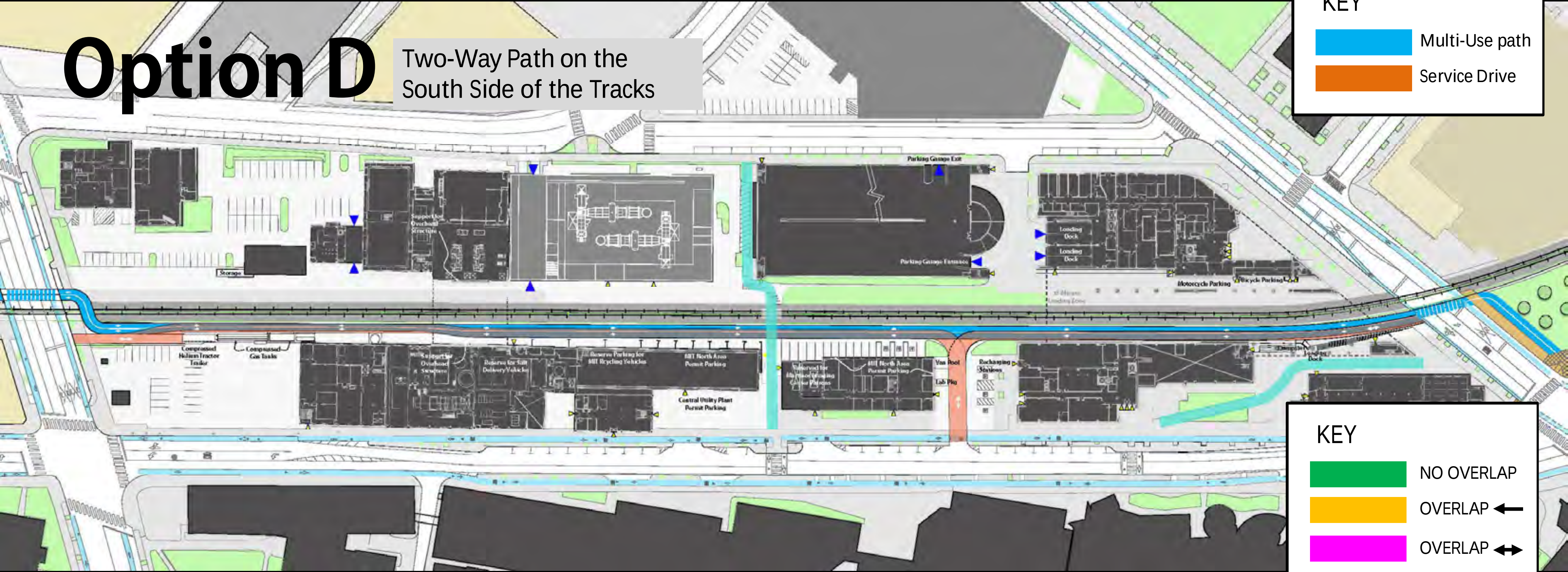

KEY
🟦 Multi-Use path
🟧 Service Drive
Parking Garage Exit
Loading Dock
Loading Dock
Motorcycle Parking
Bicycle Parking
15 Minute Loading Zone
Dumpster
Loading Dock
MIT N
Permi

Exiting and entering from Main Street

A well marked path will help to minimize conflicts.

Option D

Two-Way Path on the South Side of the Tracks


Parking Garage Exit
Parking Garage Entrance
Loading Dock
Loading Dock
Motorcycle Parking
Bicycle Parking
Storage
Support for Overhead Structure
Compressed Helium Tractor Trailer
Compressed Gas Tanks
Support for Overhead Structure
Reserve for Salt Delivery Vehicle
Reserve Parking for MIT Recycling Vehicles
MIT North Area Permit Parking
Central Utility Plant Permit Parking
MIT North Area Permit Parking
Van Pool
Lab Pkg
Recharging Stations
Dumpster
Loading Dock

KEY

🟦 Multi-Use path

🟧 Service Drive

KEY

🟩 NO OVERLAP

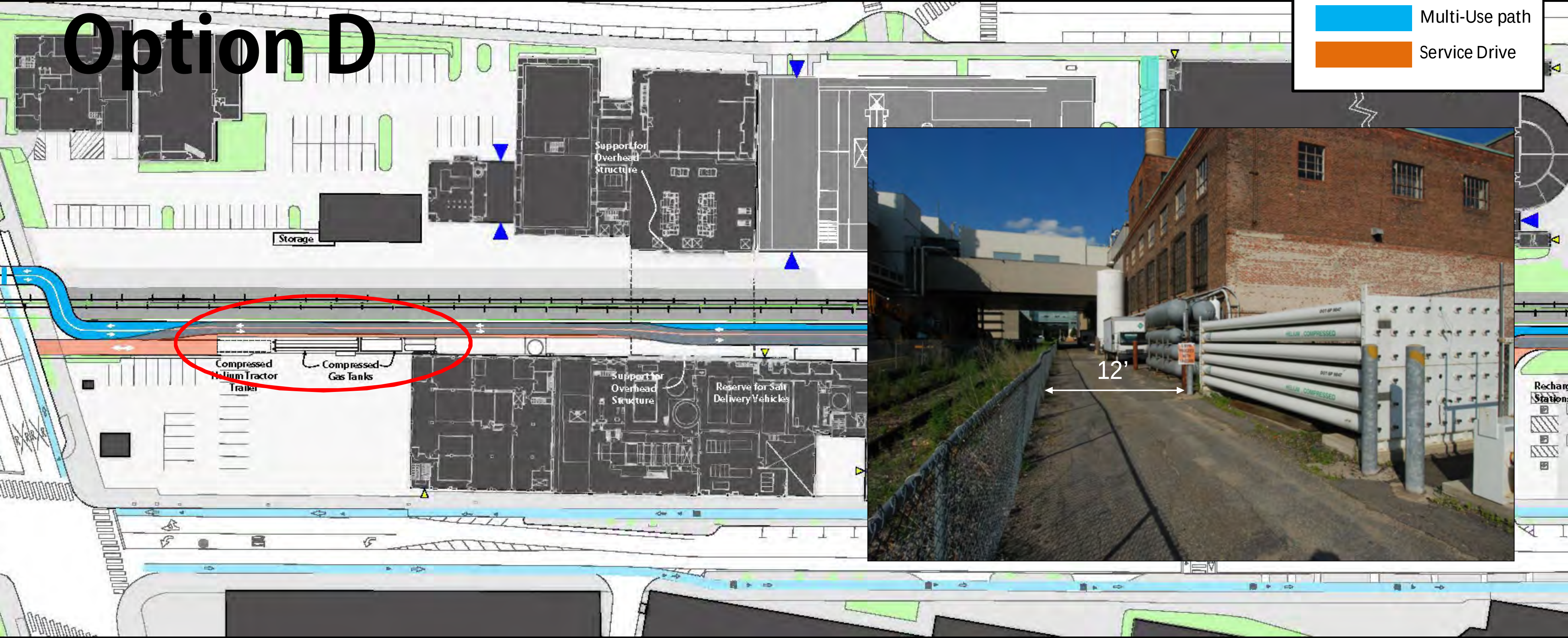
🟨 OVERLAP ←

🟪 OVERLAP ↔

🟩 🟪 🟨 🟨

There is continuous overlap of the service drive and the multi-use path due to the gas storage tanks and the parking.

Option D


Storage
Support for Overhead Structure
Compressed Helium Tractor Trailer
Compressed Gas Tanks
Support for Overhead Structure
Reserve for Salt Delivery Vehicles
Rechar
Station
12’

KEY

🟦 Multi-Use path

🟧 Service Drive

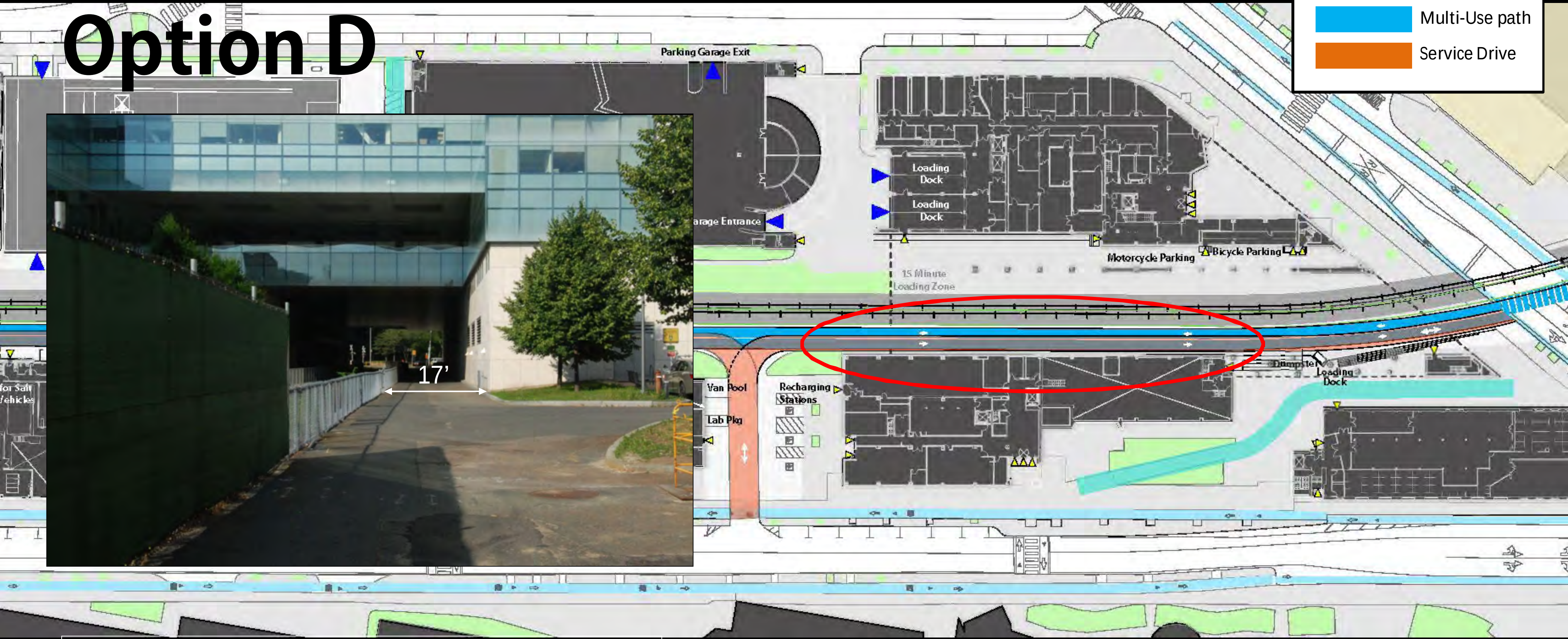
The pinch point at the tanks

Option D

KEY

🟦 Multi-Use path

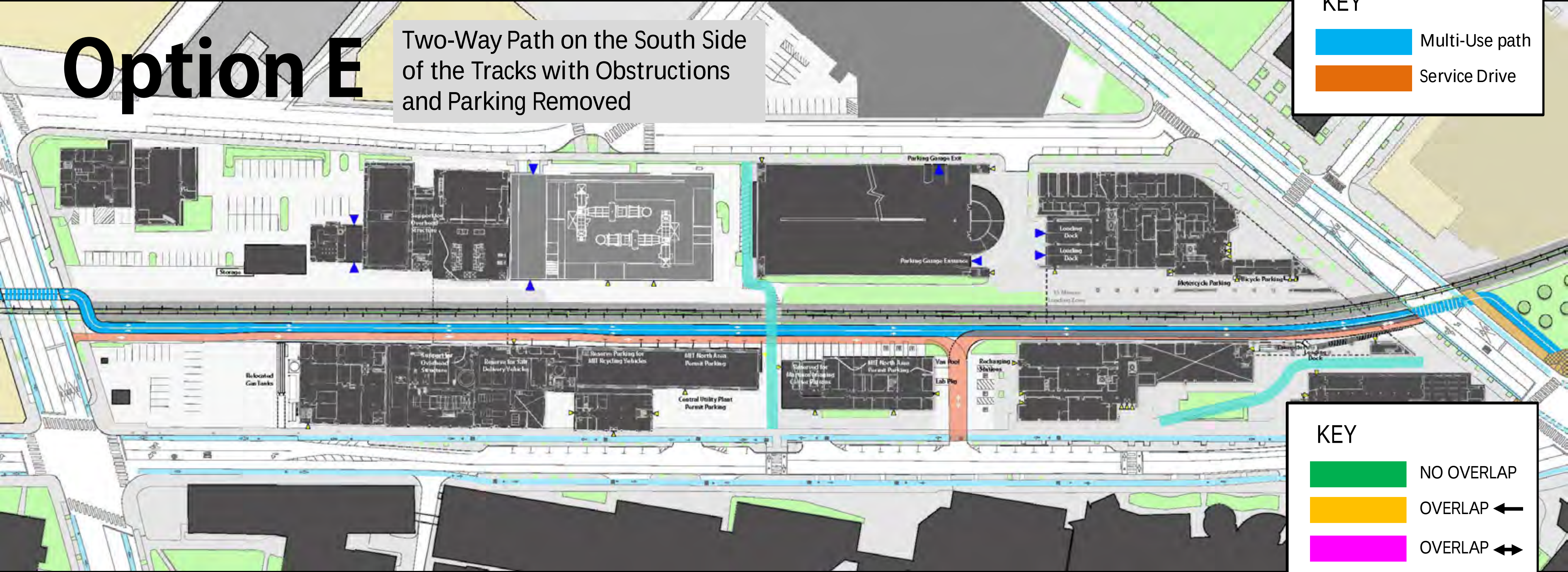
🟧 Service Drive


Parking Garage Exit
Loading Dock
Loading Dock
arage Entrance
15 Minute Loading Zone
Motorcycle Parking
Bicycle Parking
Van Pool
Lab Pkg
Recharging Stations
Dumpster
Loading Dock
for Saf
ehicles
17’

On the south side of the tracks the space available under Brain & Cog is a narrow 17 feet.

Option E

Two-Way Path on the South Side of the Tracks with Obstructions and Parking Removed

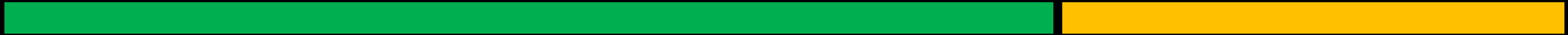

Storage
Support for Overhead Structure
Parking Garage Exit
Parking Garage Entrance
Loading Dock
Loading Dock
Motorcycle Parking
Bicycle Parking
15 Minute Loading Zone
Relocated Gas Tanks
Support for Overhead Structure
Reserve for Safe Delivery Vehicle
Reserve Parking for MIT Recycling Vehicles
MIT North Area Permit Parking
Central Utility Plant Permit Parking
Reserved for Harrison Imaging Center Parking
MIT North Area Permit Parking
Van Pool
Lab Pkg
Recharging Stations

KEY

🟦	Multi-Use path
🟧	Service Drive

KEY

🟩	NO OVERLAP
🟨	OVERLAP ←
🟪	OVERLAP ↔



There is overlap of the service drive and the multi-use path under the Brain & Cog Building

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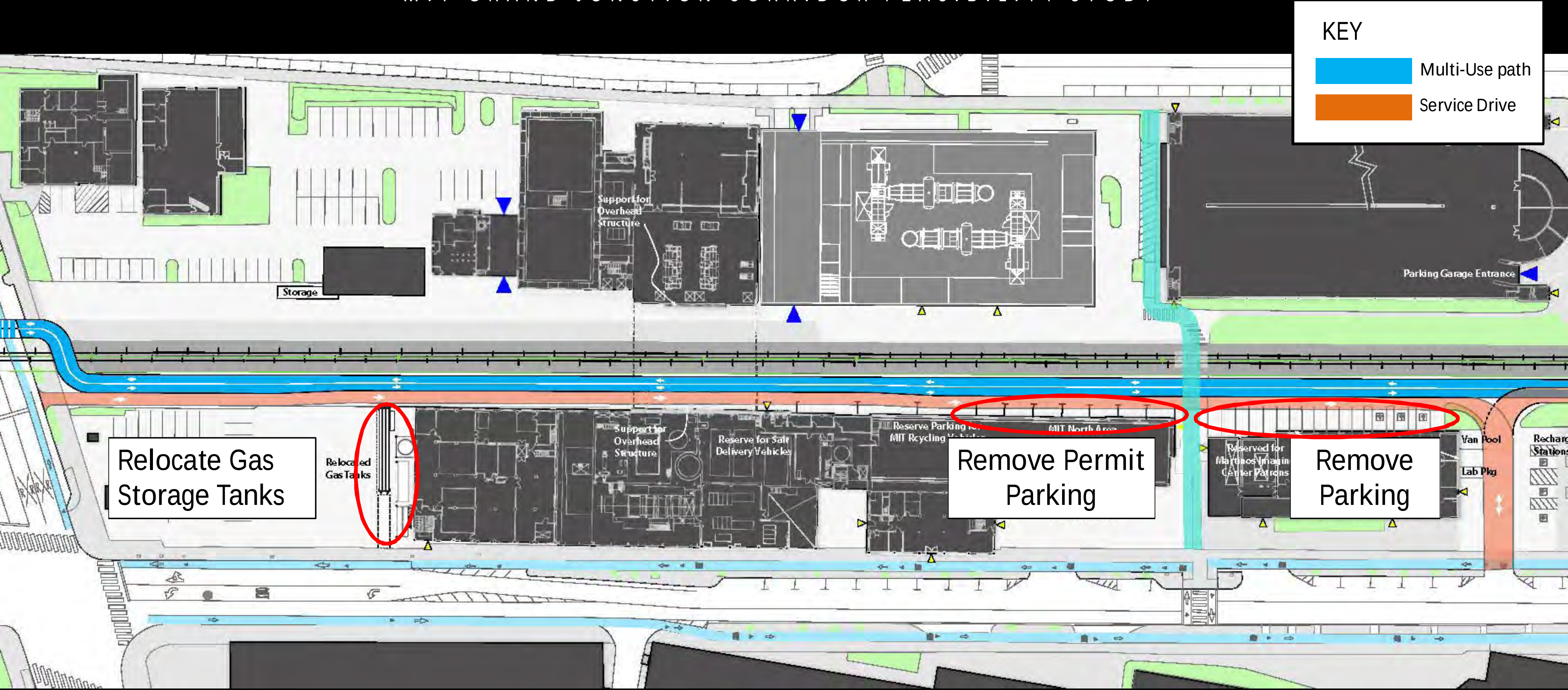
FOR INTERNAL REVIEW


Storage
Support for Overhead Structure
Parking Garage Entrance
Relocated Gas Tanks
Support for Overhead Structure
Reserve for Safe Delivery Vehicles
Reserve Parking for MIT Recycling Vehicles
MIT North Area
Reserved for Martinos Imaging Center Patrons
Van Pool
Lab Pkg
Recharg
Stations

KEY

🟦 Multi-Use path

🟧 Service Drive

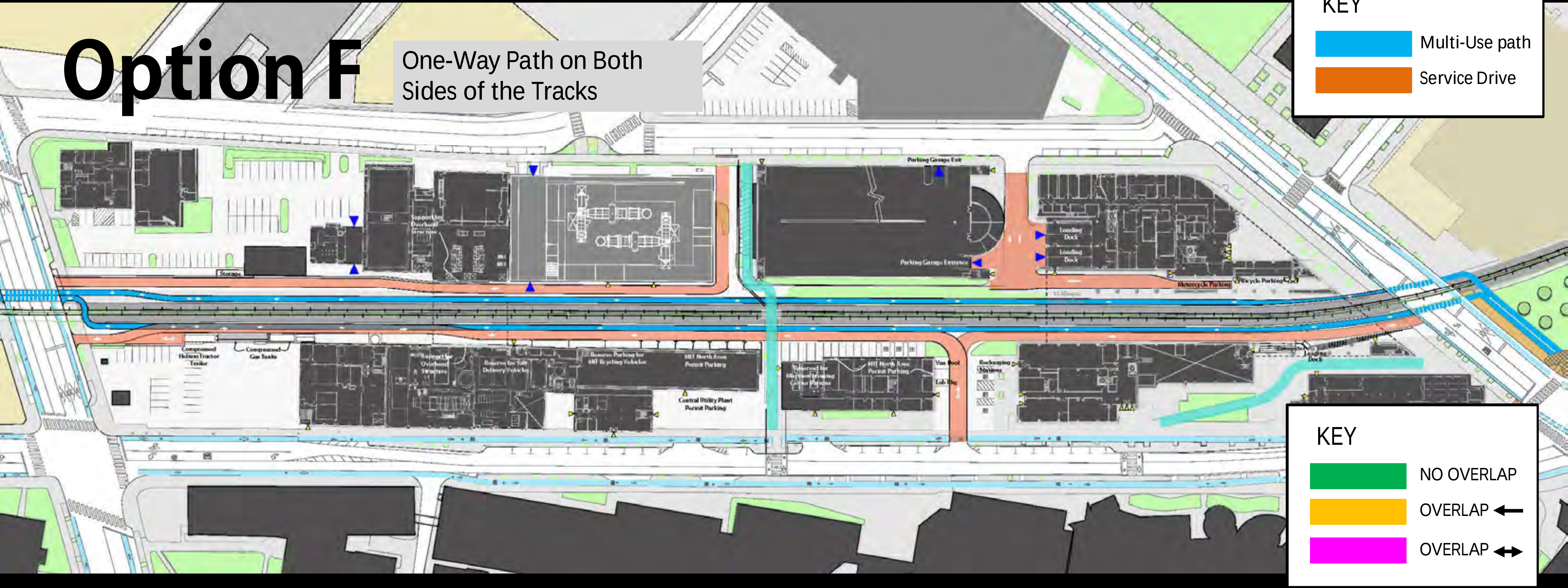
Relocate Gas Storage Tanks

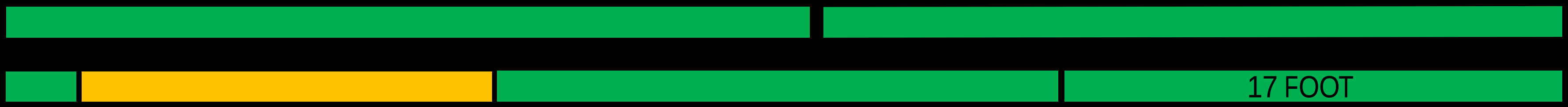
Remove Permit Parking

Remove Parking

Option F

One-Way Path on Both Sides of the Tracks


KEY
🟦 Multi-Use path
🟧 Service Drive
Storage
Support for Overhead Structure
Parking Garage Exit
Parking Garage Entrance
Loading Dock
Loading Dock
Motorcycle Parking
Bicycle Parking
Compressed Helium Tractor Trailer
Compressed Gas Tanks
Support for Overhead Structure
Reserve for Safe Delivery Vehicles
Reserve Parking for MIT Recycling Vehicles
MIT North Area Permit Parking
Central Utility Plant Permit Parking
Reserved for Martinos Imaging Center Patrons
MIT North Area Permit Parking
Van Pool
Lab Pkg
Recharging Stations
Dumpster
Loading Dock
KEY
🟩 NO OVERLAP
🟨 OVERLAP ←
🟪 OVERLAP ↔



There is overlap of the service drive and the multi-use path at the gas storage tanks. Wrong way bicycle travel is likely.

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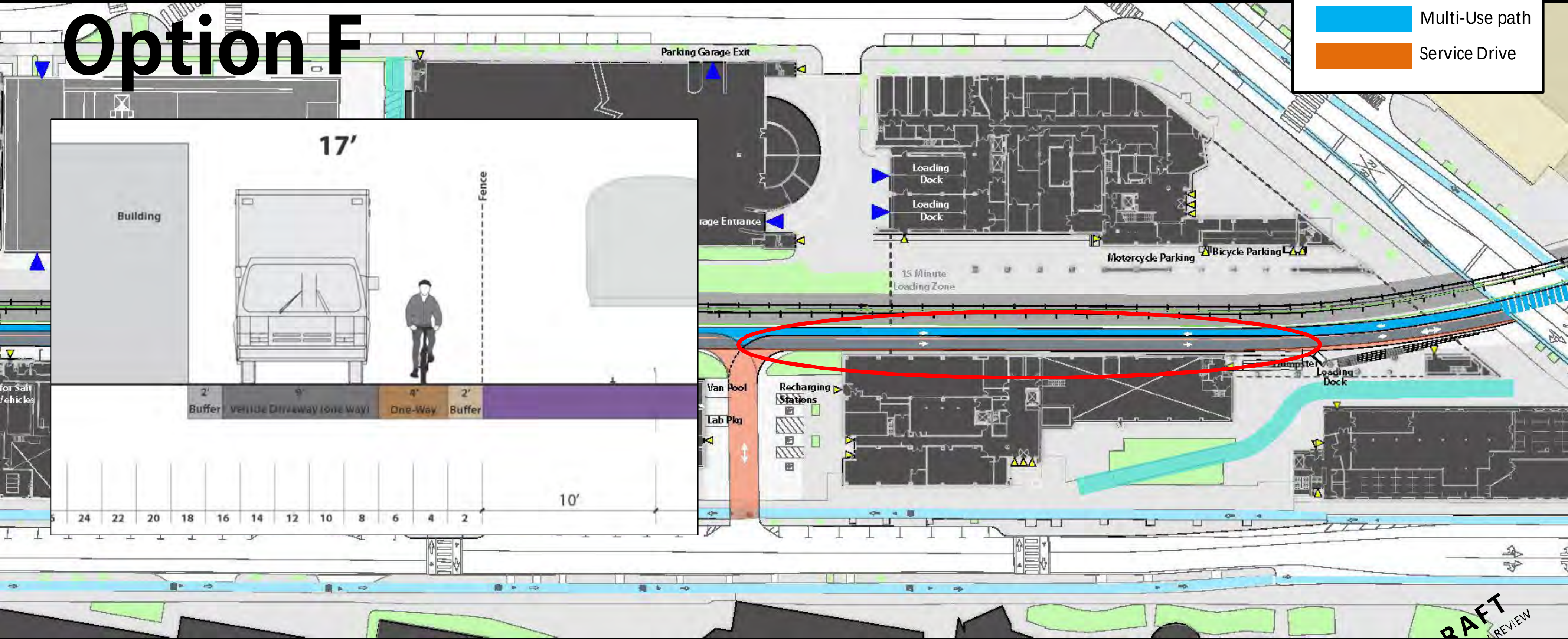
FOR INTERNAL REVIEW

Option F

KEY

🟦	Multi-Use path
🟧	Service Drive


17′
Building
Fence
2′
Buffer
9′
Vehicle Driveway (one way)
4′
One-Way
2′
Buffer
10′
24
22
20
18
16
14
12
10
8
6
4
2
Parking Garage Exit
rage Entrance
Loading Dock
Loading Dock
Motorcycle Parking
Bicycle Parking
15 Minute Loading Zone
Van Pool
Lab Pkg
Recharging Stations
Dumpster
Loading Dock
for Sa
ehicles
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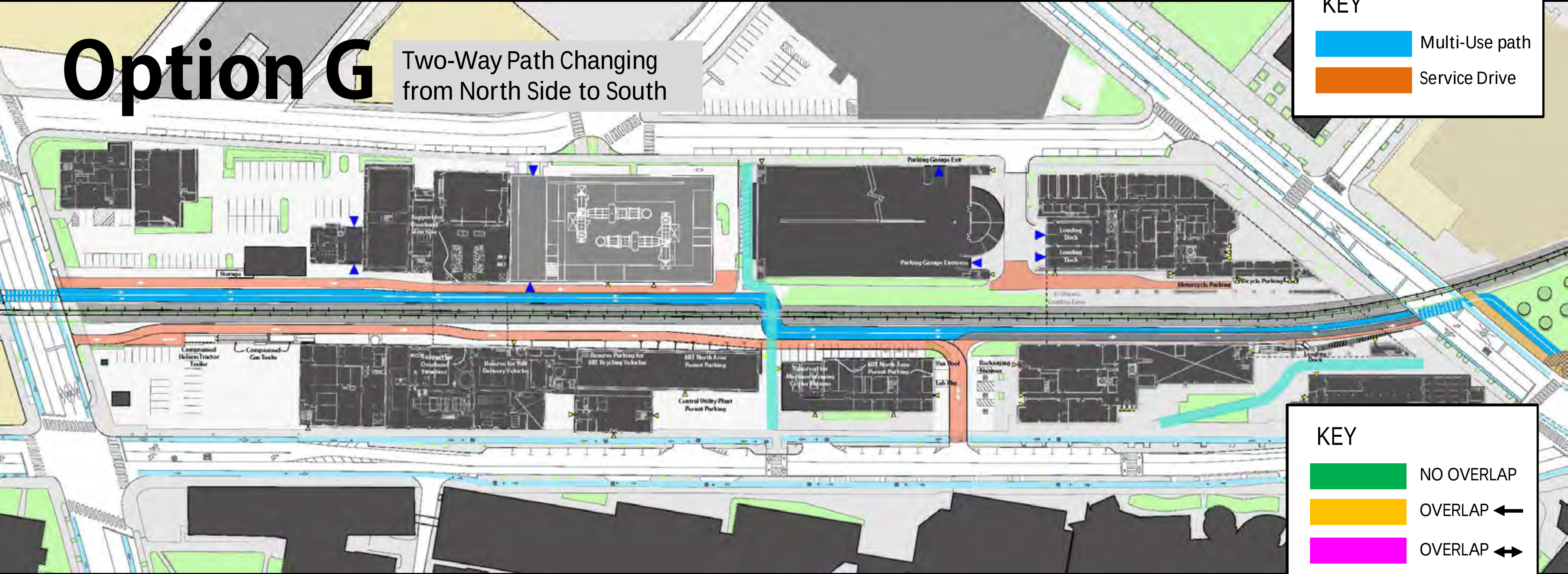
REVIEW

A one-way path under the Brain & Cog building is tight but possible.

Option G

Two-Way Path Changing from North Side to South

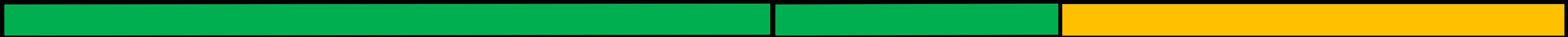

Storage
Supports for Overhead Structure
Parking Garage Exit
Parking Garage Entrance
Loading Dock
Loading Dock
Motorcycle Parking
Bicycle Parking
Loading Zone
Compressed Helium Tractor Trailer
Compressed Gas Tanks
Supports for Overhead Structure
Reserve for Staff Delivery Vehicles
Reserve Parking for MIT Recycling Vehicles
MIT North Area Permit Parking
Central Utility Plant Permit Parking
Reserved for Marsnon Imaging Center Patients
MIT North Area Permit Parking
Van Pool
Lab Pkg
Recharging Stations
Loading Dock

KEY

🟦	Multi-Use path
🟧	Service Drive

KEY

🟩	NO OVERLAP
🟨	OVERLAP ←
🟪	OVERLAP ↔



There is overlap of the service drive and the multi-use path under the Brain & Cog Building

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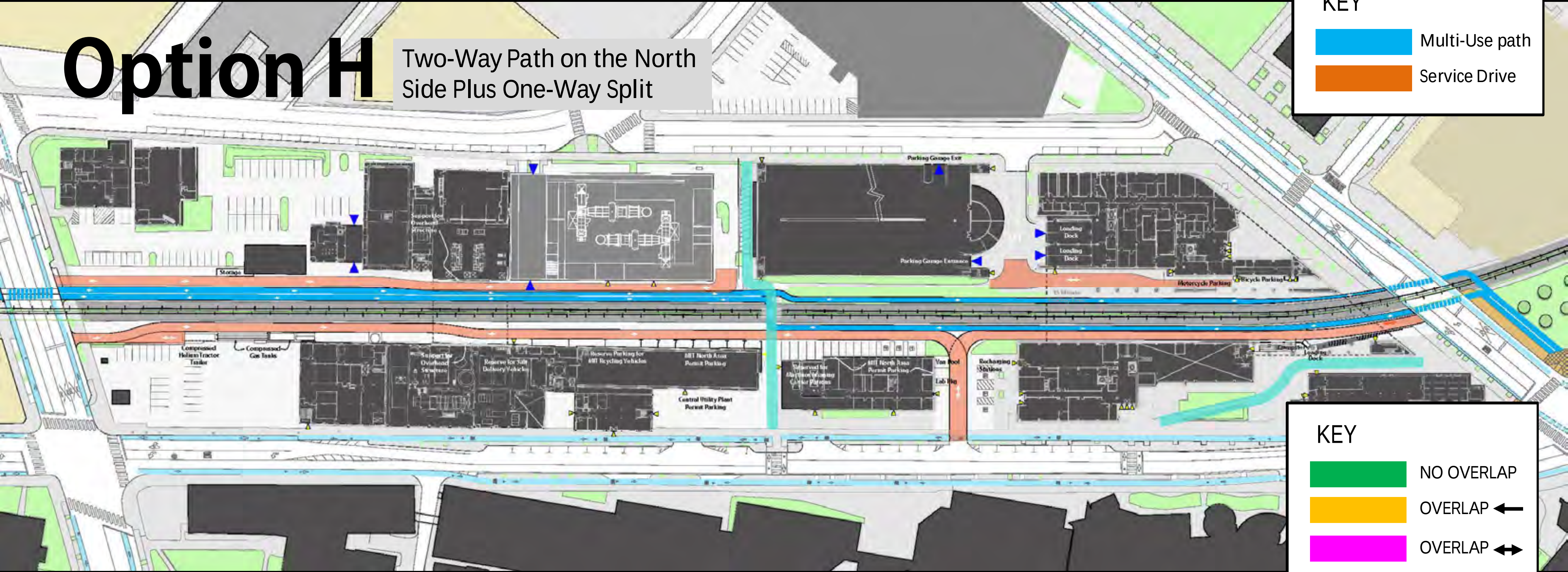
FOR INTERNAL REVIEW

Option H

Two-Way Path on the North Side Plus One-Way Split


Parking Garage Exit
Parking Garage Entrance
Loading Dock
Loading Dock
Motorcycle Parking
Bicycle Parking
Storage
Support for Overhead Structure
Compressed Helium Tractor Trailer
Compressed Gas Tanks
Support for Overhead Structure
Reserve for Safe Delivery Vehicles
Reserve Parking for MIT Recycling Vehicles
MIT North Area Permit Parking
Central Utility Plant Permit Parking
MIT North Area Permit Parking
Van Pool
Lab Bay
Recharging Stations

KEY

🟦	Multi-Use path
🟧	Service Drive

KEY

🟩	NO OVERLAP
🟨	OVERLAP ←
🟪	OVERLAP ↔

There is no overlap of the service drive and the multi-use path. Wrong way bicycle travel is likely on the one-way sections of the path.

17 FEET – ONE WAY

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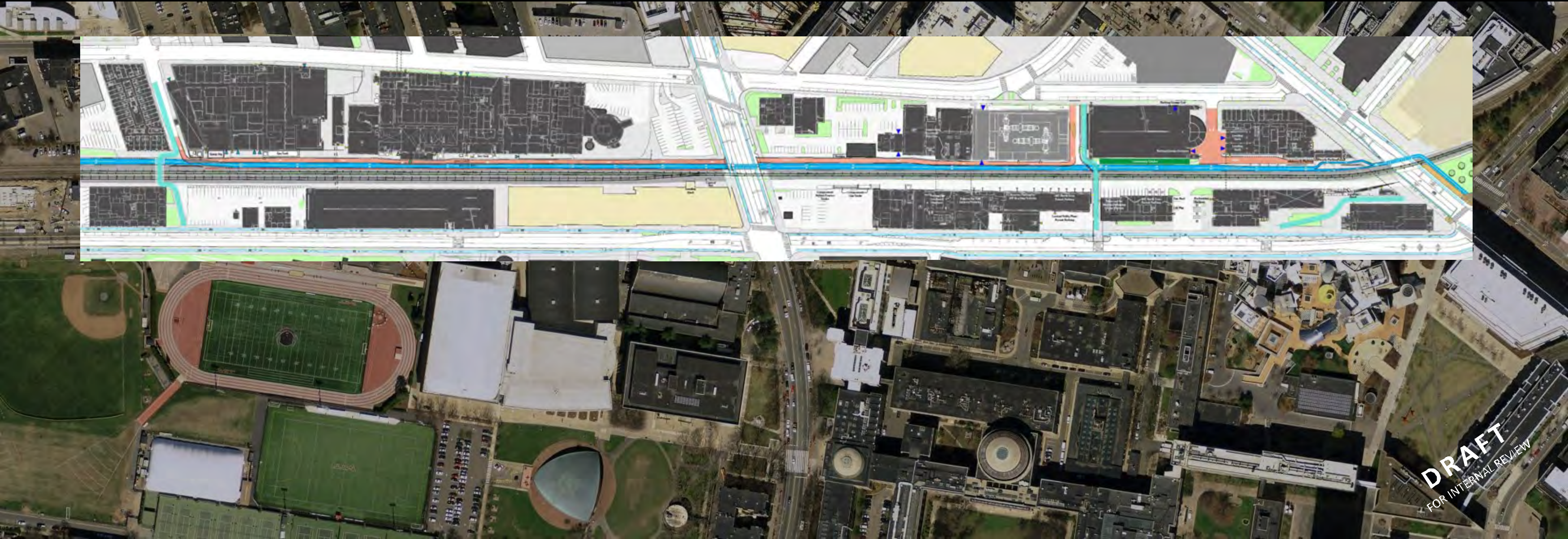
FOR INTERNAL REVIEW

RECOMMENDATION
Option A + Option C
Continuous along the north side of the tracks



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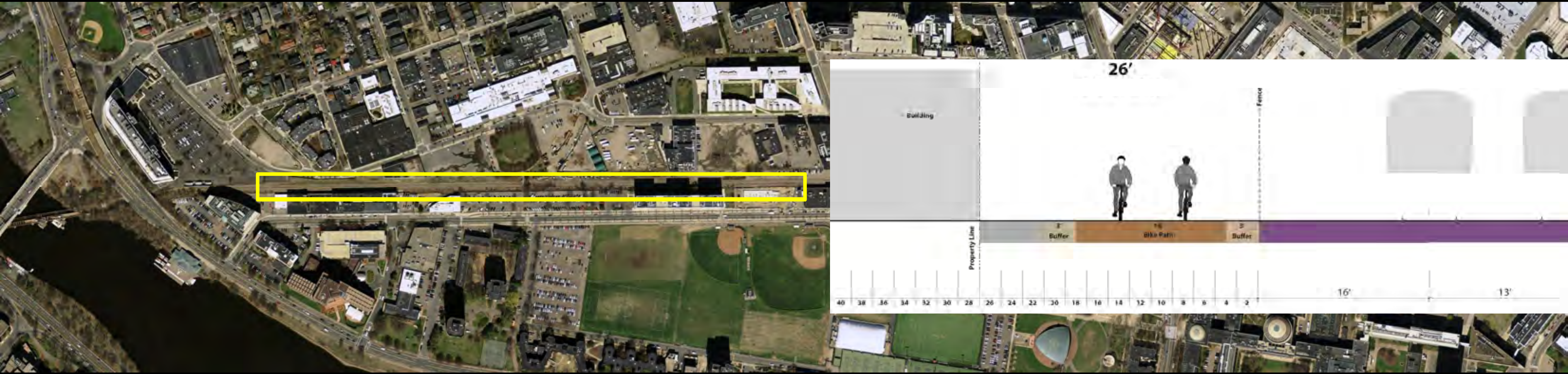
FOR INTERNAL REVIEW

Connections to the West

MassDOT Portion of the corridor


26′
Building
Fence
3′
Buffer
16′
Bike Path
3′
Buffer
Property Line
40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2
16′
13′

The corridor from Pacific to Henry is owned by MassDOT and has adequate width to accommodate a multi-use path.

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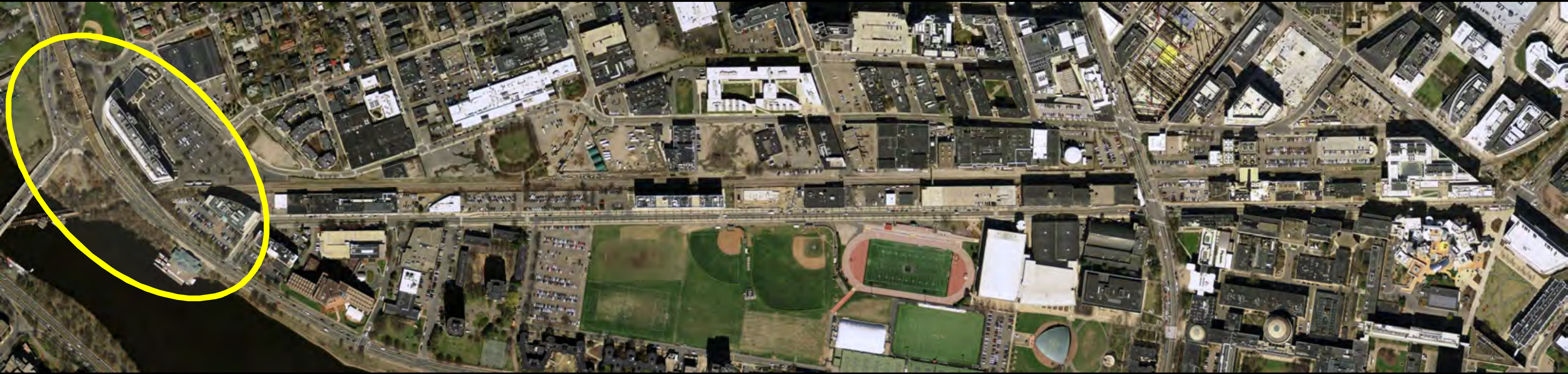
FOR INTERNAL REVIEW

Connections to the West



Connections need to be made between the GJ Corridor and the BU Bridge, Charles River paths, and eventually to Allston.

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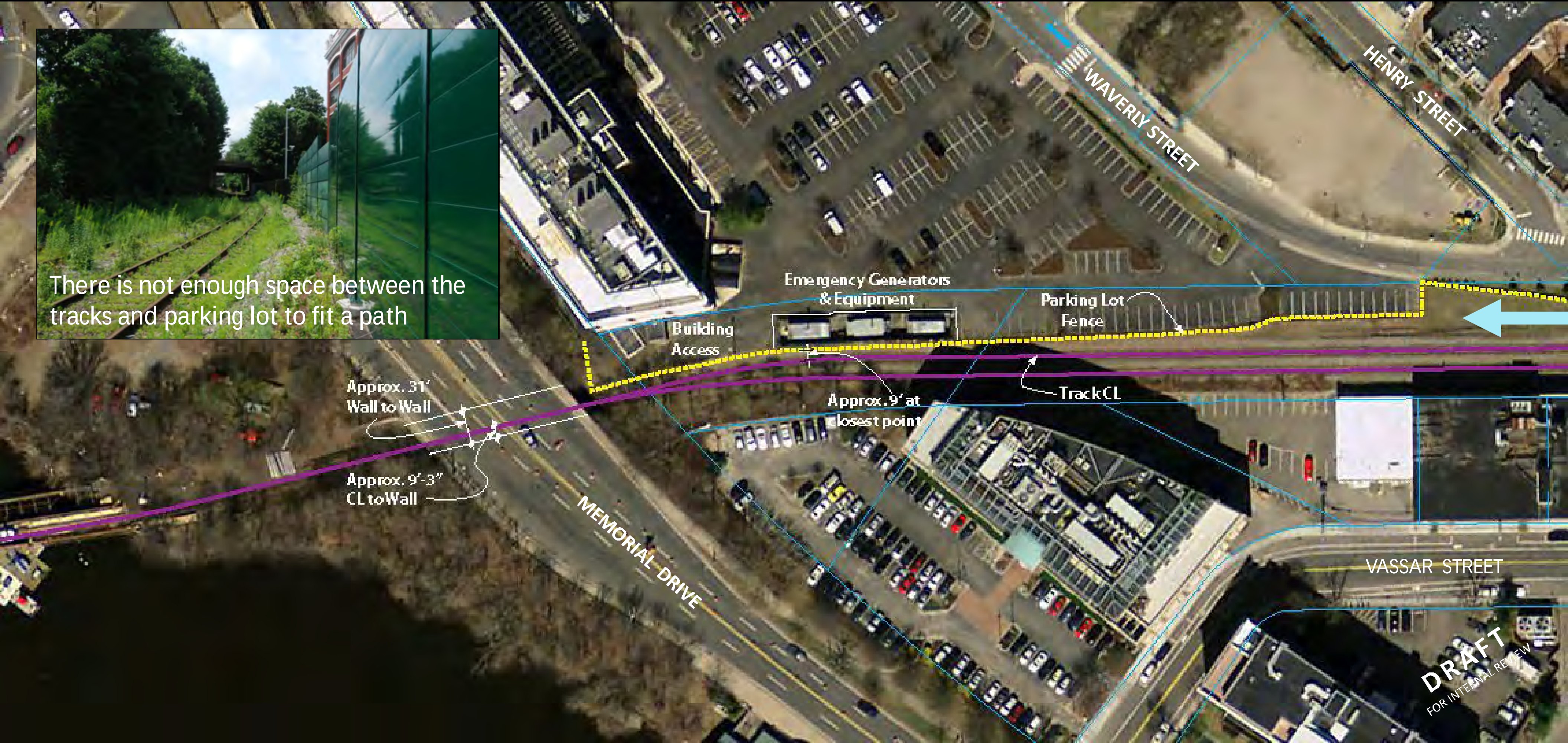

There is not enough space between the tracks and parking lot to fit a path

WAVERLY STREET
HENRY STREET
Emergency Generators & Equipment
Parking Lot Fence
Building Access
Approx. 31' Wall to Wall
Approx. 9' at closest point
Track CL
Approx. 9'-3" CL to Wall
MEMORIAL DRIVE
VASSAR STREET

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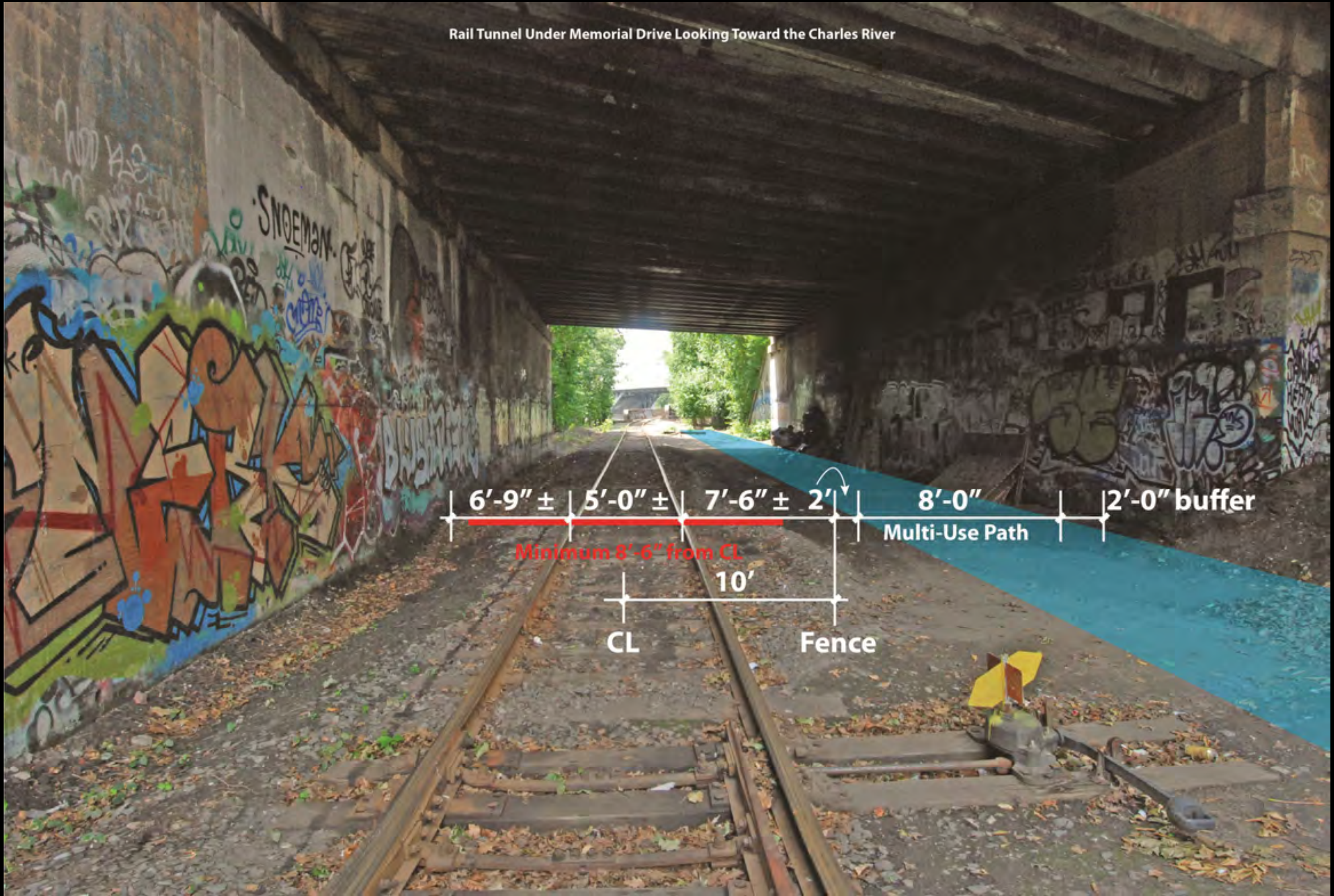
FOR INTERNAL REVIEW



Rail Tunnel Under Memorial Drive Looking Toward the Charles River

6'-9" ±
5'-0" ±
7'-6" ±
2'
8'-0"
Multi-Use Path
2'-0" buffer
Minimum 8'-6" from CL
10'
CL
Fence

There is space for a narrow path through the tunnel under Memorial Drive. However, if a second rail is added that space would be eliminated.

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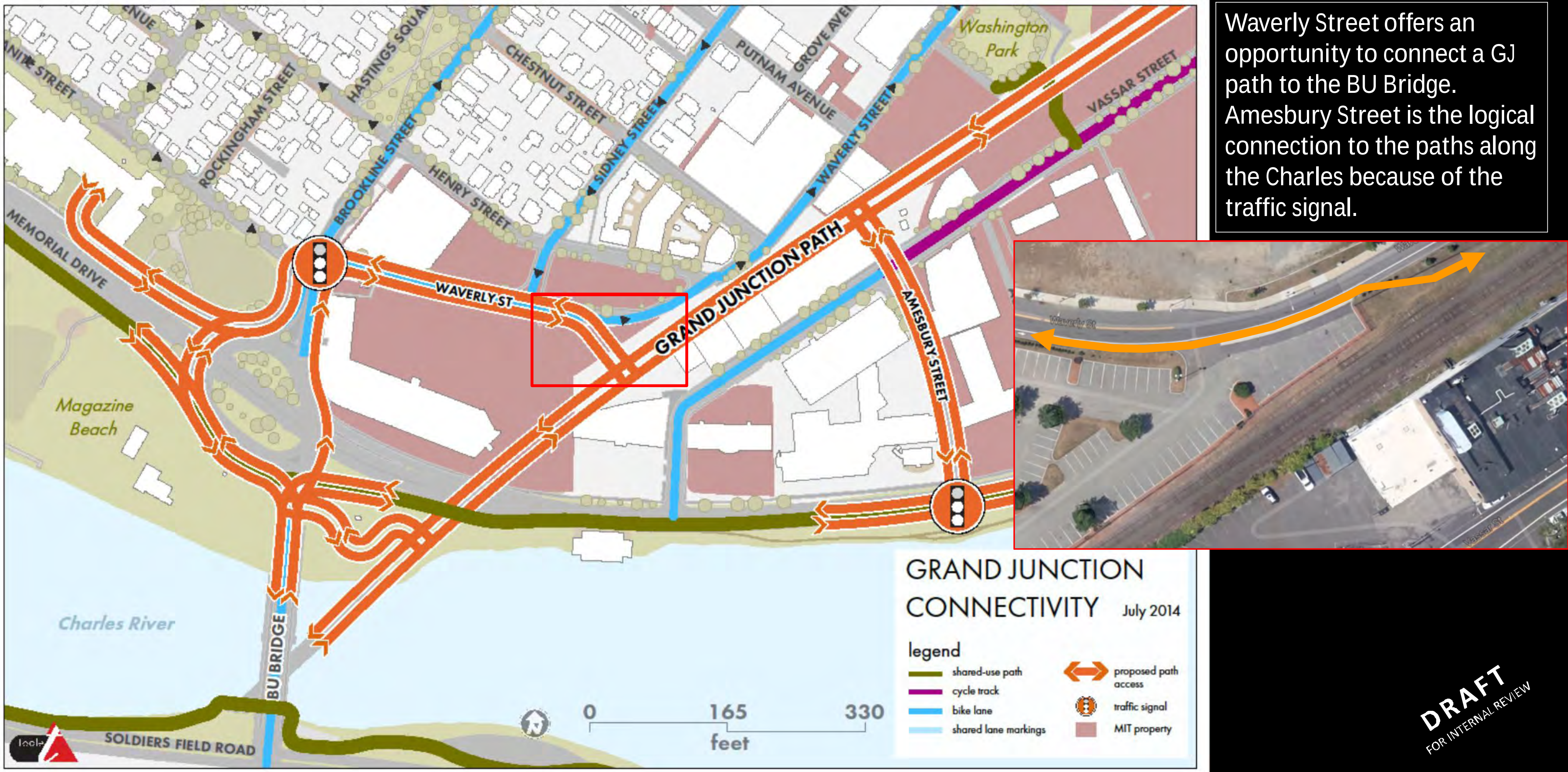
Waverly Street offers an opportunity to connect a GJ path to the BU Bridge. Amesbury Street is the logical connection to the paths along the Charles because of the traffic signal.


GRAND JUNCTION CONNECTIVITY
July 2014
legend
shared-use path
cycle track
bike lane
shared lane markings
proposed path access
traffic signal
MIT property
0
165
330
feet
GRAND JUNCTION PATH
WAVERLY ST
AMESBURY STREET
VASSAR STREET
WAVERLY STREET
GROVE AVENUE
PUTNAM AVENUE
SIDNEY STREET
CHESTNUT STREET
HENRY STREET
BROOKLINE STREET
HASTINGS SQUARE
ROCKINGHAM STREET
MEMORIAL DRIVE
Washington Park
Magazine Beach
Charles River
BU BRIDGE
SOLDIERS FIELD ROAD
Waverly St
Vassar St

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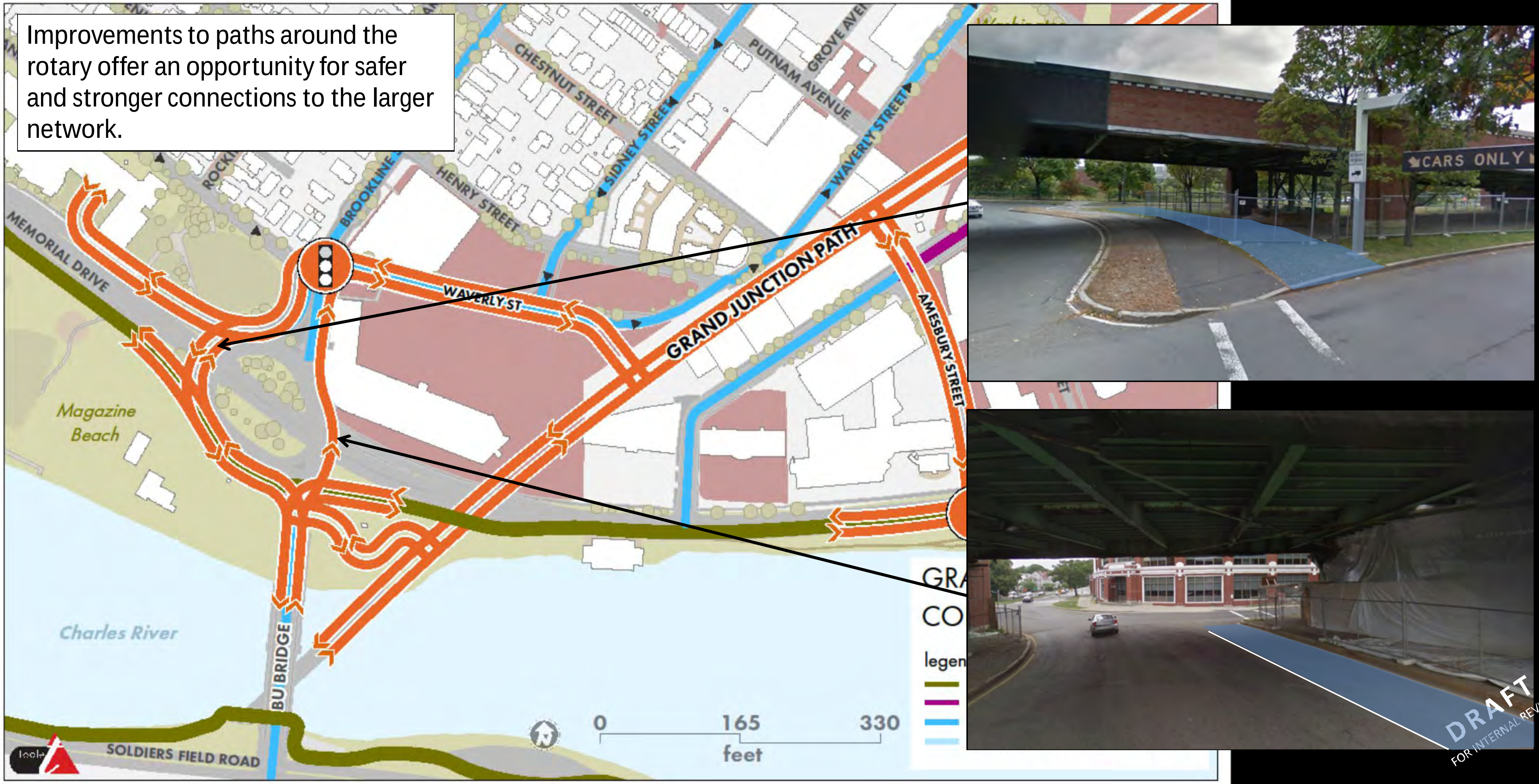
Improvements to paths around the rotary offer an opportunity for safer and stronger connections to the larger network.


MEMORIAL DRIVE
ROCK
BROOKLINE
CHESTNUT STREET
SIDNEY STREET
PUTNAM AVENUE
GROVE AVE
HENRY STREET
WAVERLY STREET
WAVERLY ST
GRAND JUNCTION PATH
AMESBURY STREET
Magazine Beach
Charles River
BU BRIDGE
SOLDIERS FIELD ROAD
GRA
CO
legen
0
165
330
feet
CARS ONLY
toole

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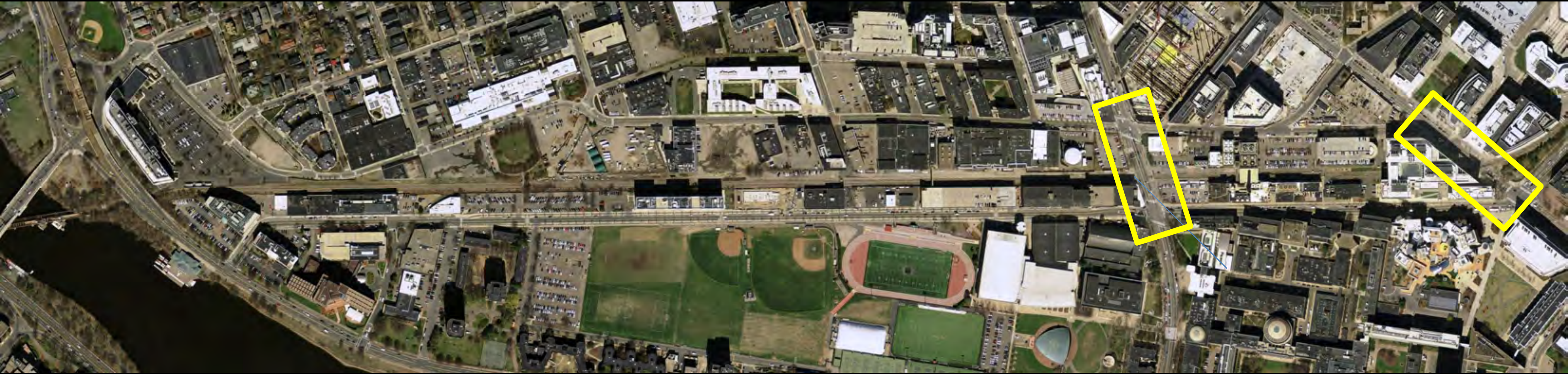
FOR INTERNAL REVIEW

Crossing Mass Ave and Main Street



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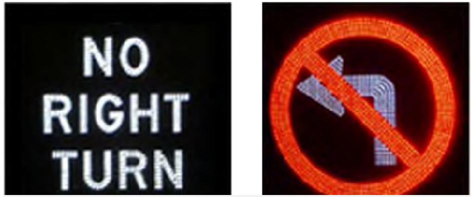
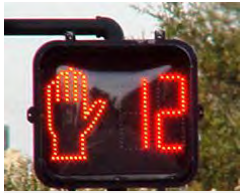
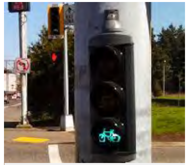
Signal Options



Blank Out Signs

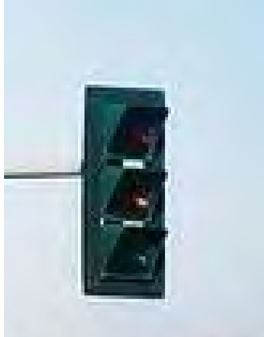


D-Pedestrian Signal

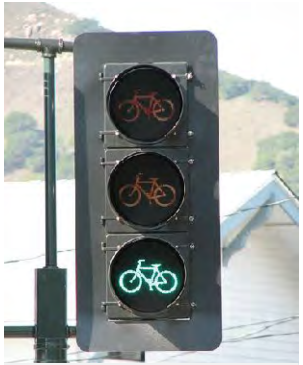


B-Nearside Bicycle Signal

A – Traffic Signal



A-Limited Visibility Signal



C-Far Side Bicycle Signal

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Detector Options

Video Detection

Pros:
-Detection improved with bike or helmet light
-Easy to relocate detection zone
-Can detect any object without metal

Cons:
- Low light, foggy or inclement weather may interfere with recognition

Loop Detector

Pros:
- Can detect single aluminum tire
- Detectors are easy to spot on clear day
- Most common

Cons:
- Bike must be positioned exactly
- Darkness, new road surfaces, debris may make detection unclear

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Detector Options

Microwave Detector

Pros:
- Can be used on any surface
- Also used for pedestrians

Cons:
- Complex to Maintain
- Accuracy on Urban Sidewalks

Push Button Detector

Pros:
- No failure of detection
- Durable

PUSH
BUTTON
FOR
Portland, OR

Cons:
- Placement requirements

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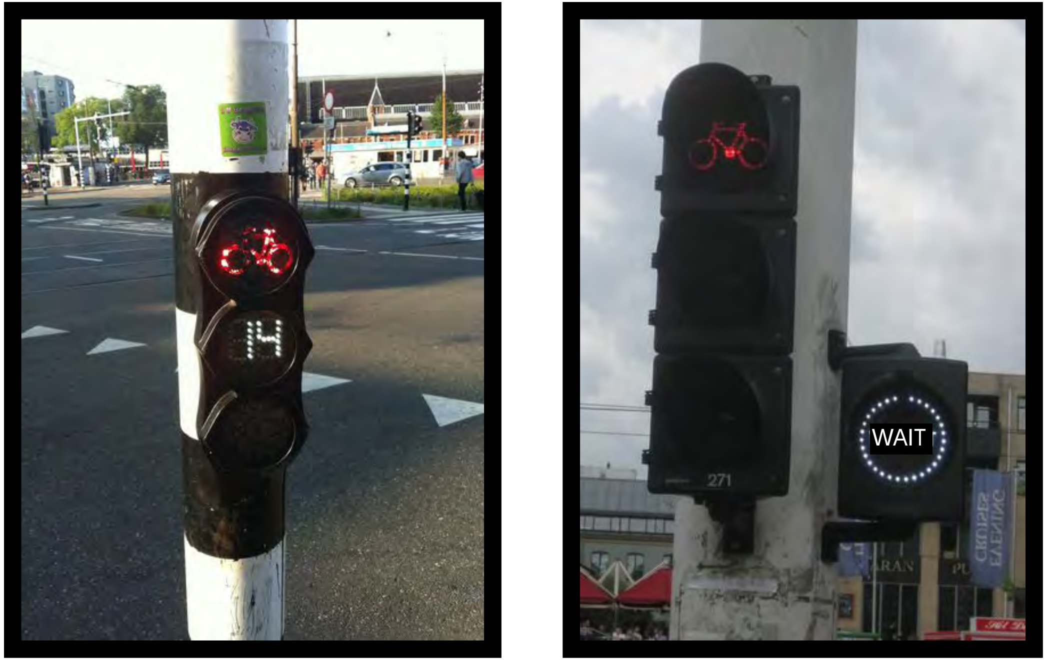
Bicycle Countdown to Green



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FOR INTERNAL REVIEW

Active Rail Crossings

Figure 8C-4. Example of Flashing-Light Signal Assembly for Pedestrian Crossings

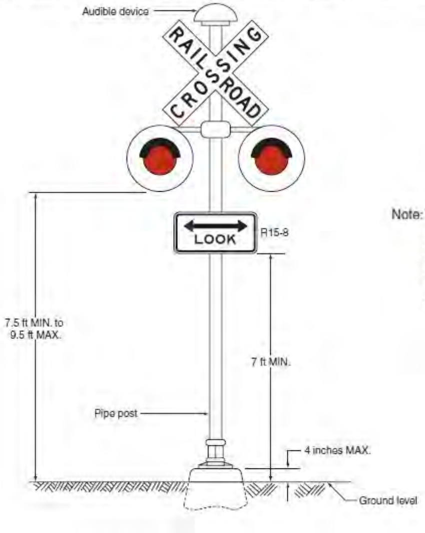
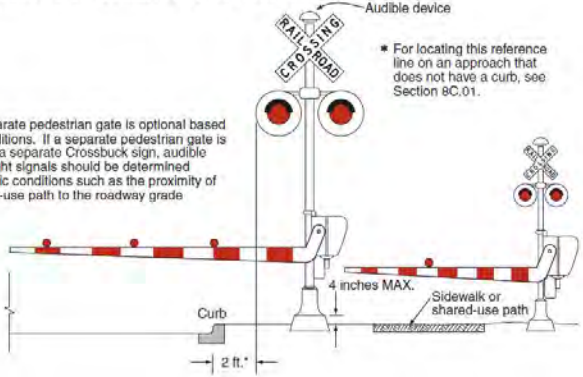

Audible device
RAILROAD CROSSING
LOOK
R15-8
7.5 ft MIN. to 9.5 ft MAX.
7 ft MIN.
Pipe post
4 inches MAX.
Ground level

Figure 8C-6. Example of a Separate Pedestrian Gate


Audible device
RAILROAD CROSSING
4 inches MAX.
Sidewalk or shared-use path
Curb
2 ft.*

* For locating this reference line on an approach that does not have a curb, see Section 8C.01.

Note: The provision of a separate pedestrian gate is optional based upon site-specific conditions. If a separate pedestrian gate is provided, the need for a separate Crossbuck sign, audible device, and flashing-light signals should be determined based upon site-specific conditions such as the proximity of the sidewalk or shared-use path to the roadway grade crossing devices.

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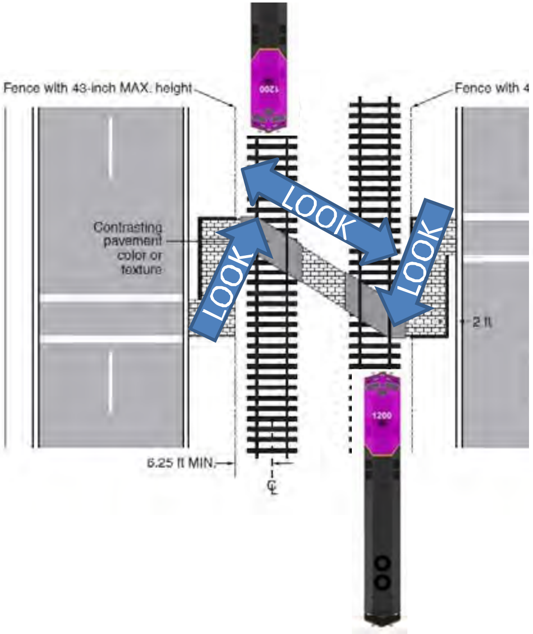
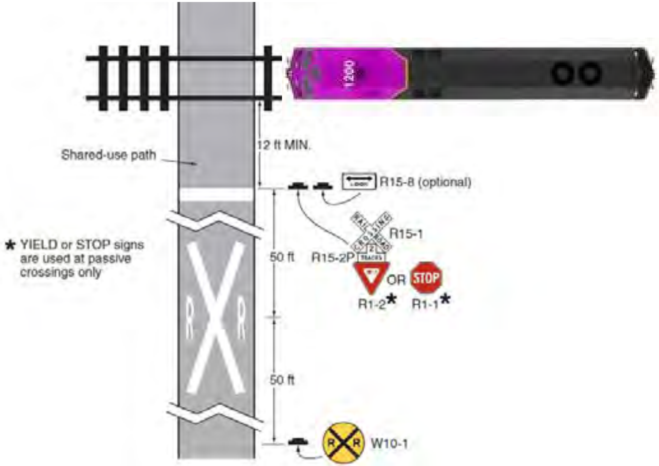
Passive Rail Crossings

MUTCD – Pedestrian Crossing


Fence with 43-inch MAX. height
Fence with 4
1200
Contrasting pavement color or texture
LOOK
LOOK
LOOK
2 ft
6.25 ft MIN.
1200

MUTCD – Path Crossing


1200
Shared-use path
12 ft MIN.
R15-8 (optional)
R15-1
50 ft
R15-2P
OR
STOP
R1-2 *
R1-1 *
R
R
50 ft
W10-1
* YIELD or STOP signs are used at passive crossings only

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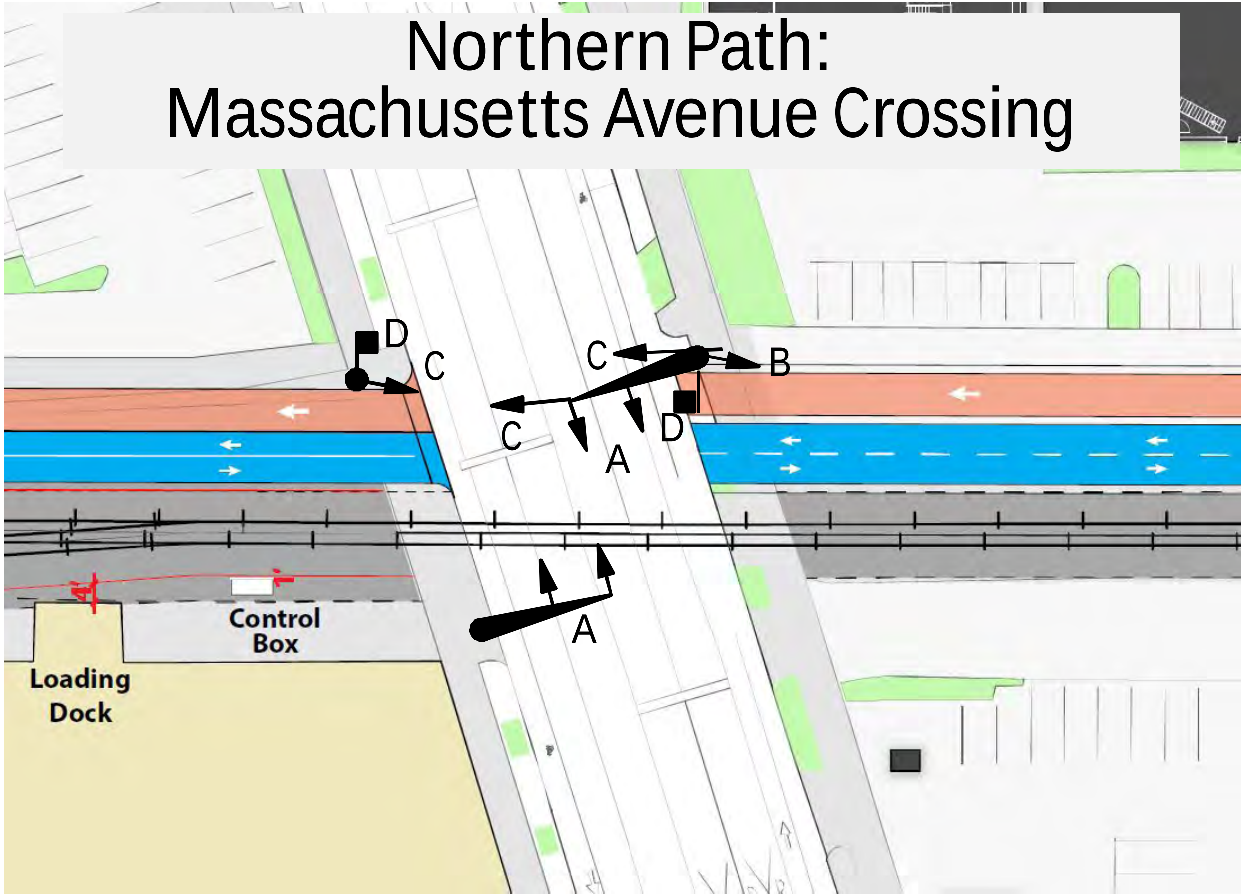
Northern Path: Massachusetts Avenue Crossing


D
C
C
B
C
D
A
A
Control Box
Loading Dock

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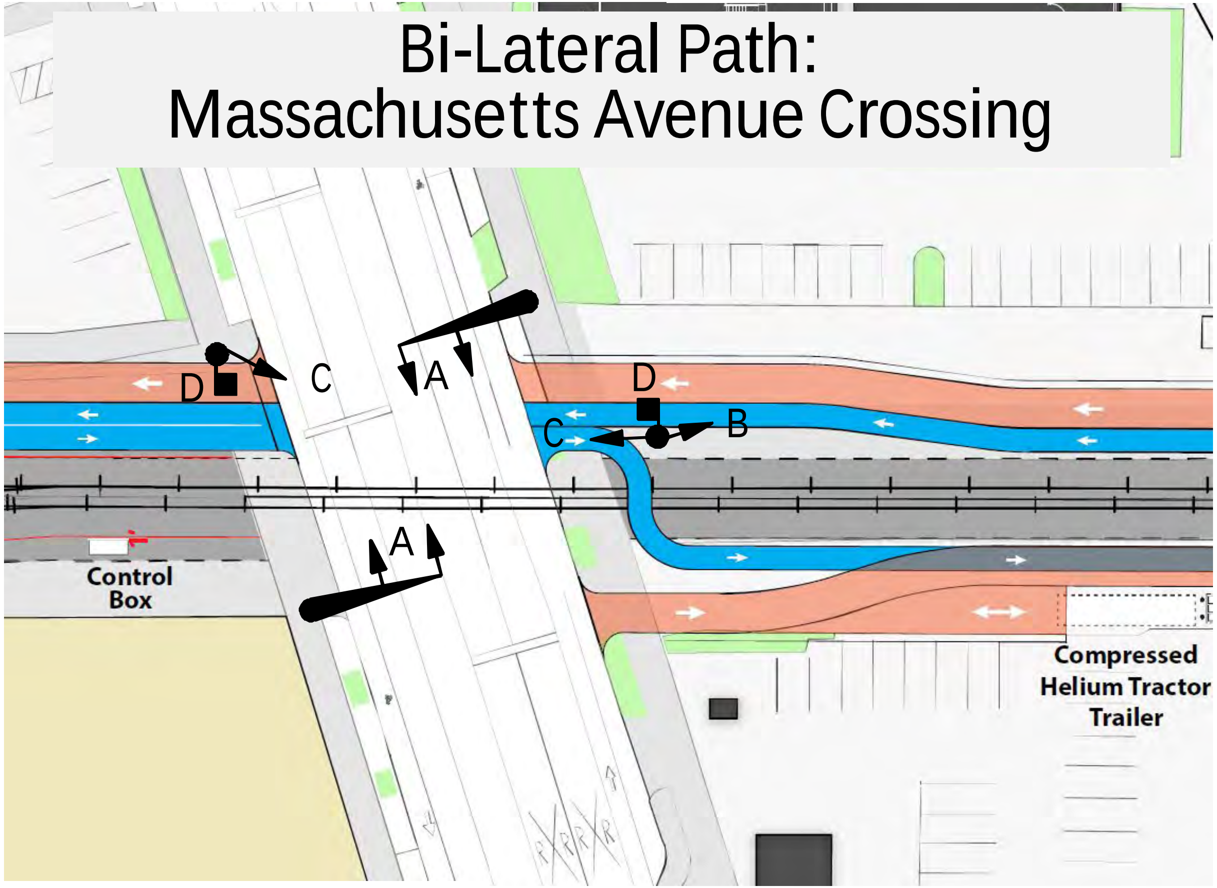
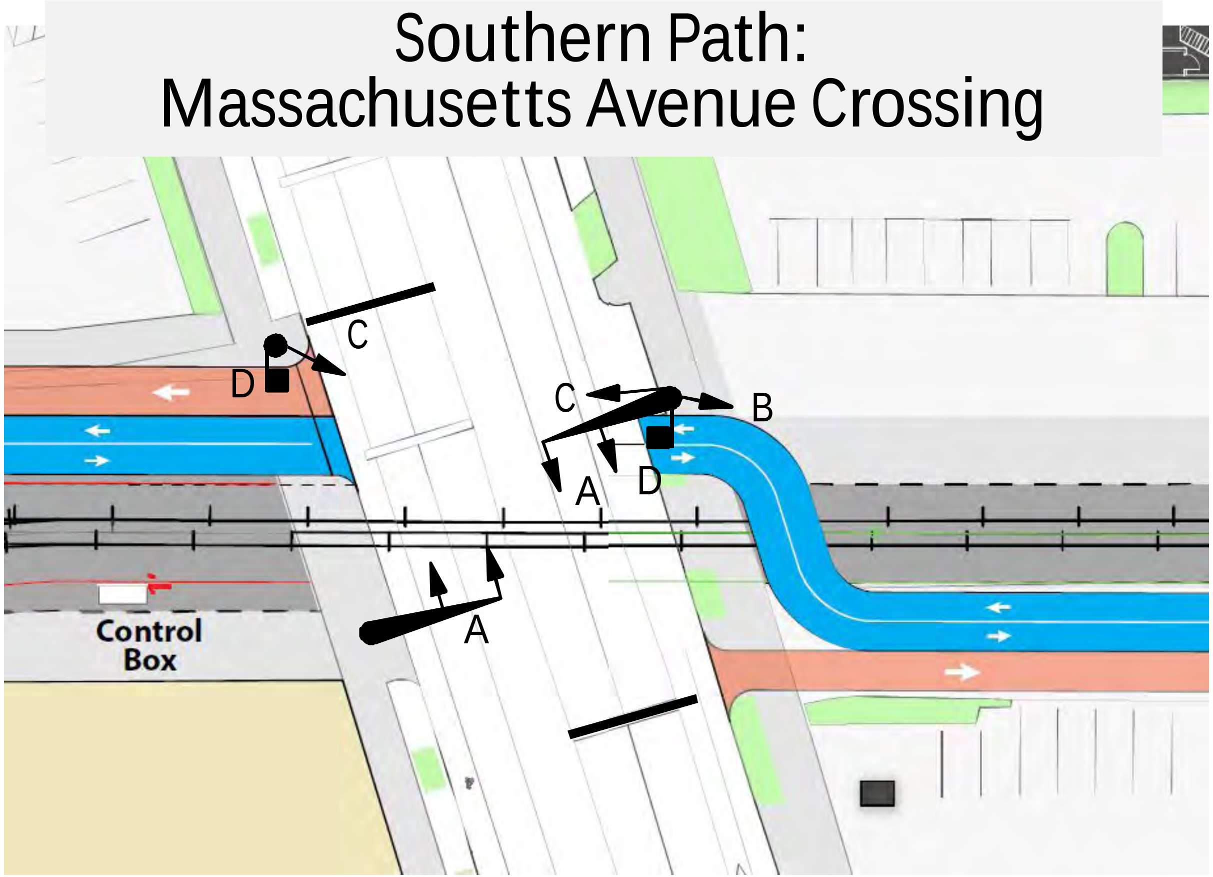
Bi-Lateral Path:
Massachusetts Avenue Crossing


D
C
A
D
C
B
A
Control Box
Compressed Helium Tractor Trailer

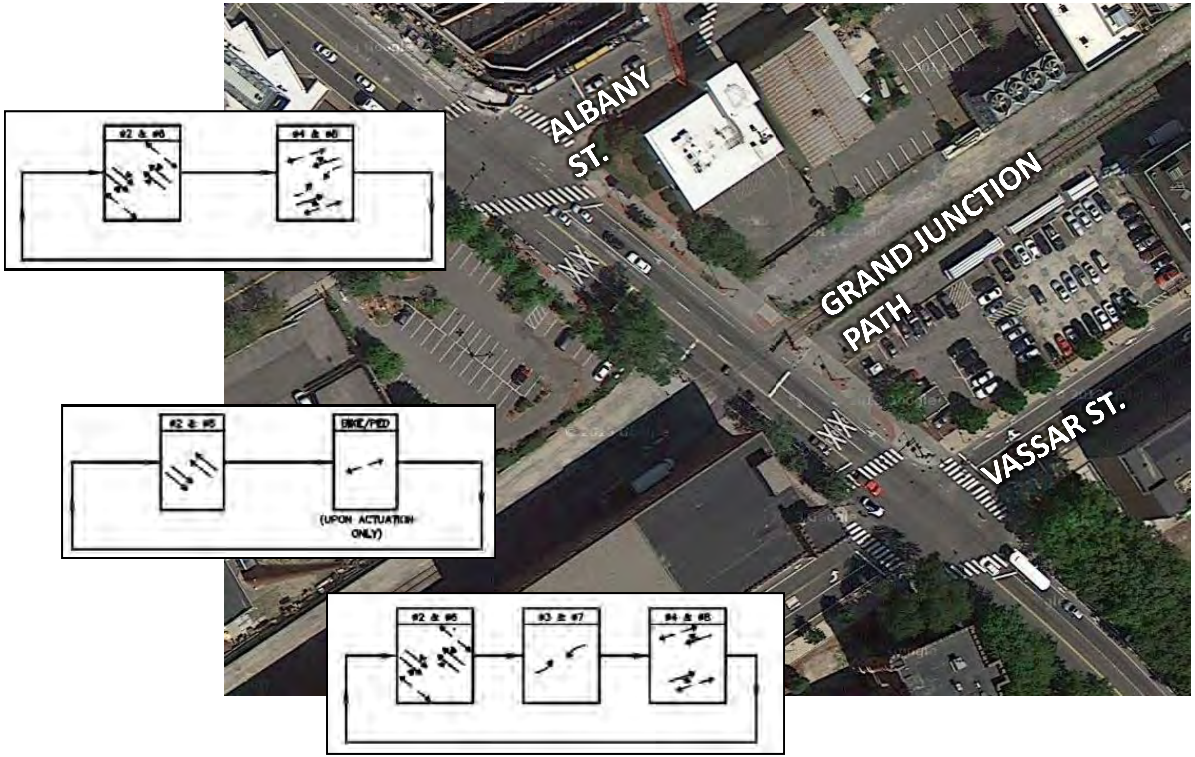
DRAFT
FOR INTERNAL REVIEW

Southern Path: Massachusetts Avenue Crossing


C
D
C
B
A
D
A
Control Box

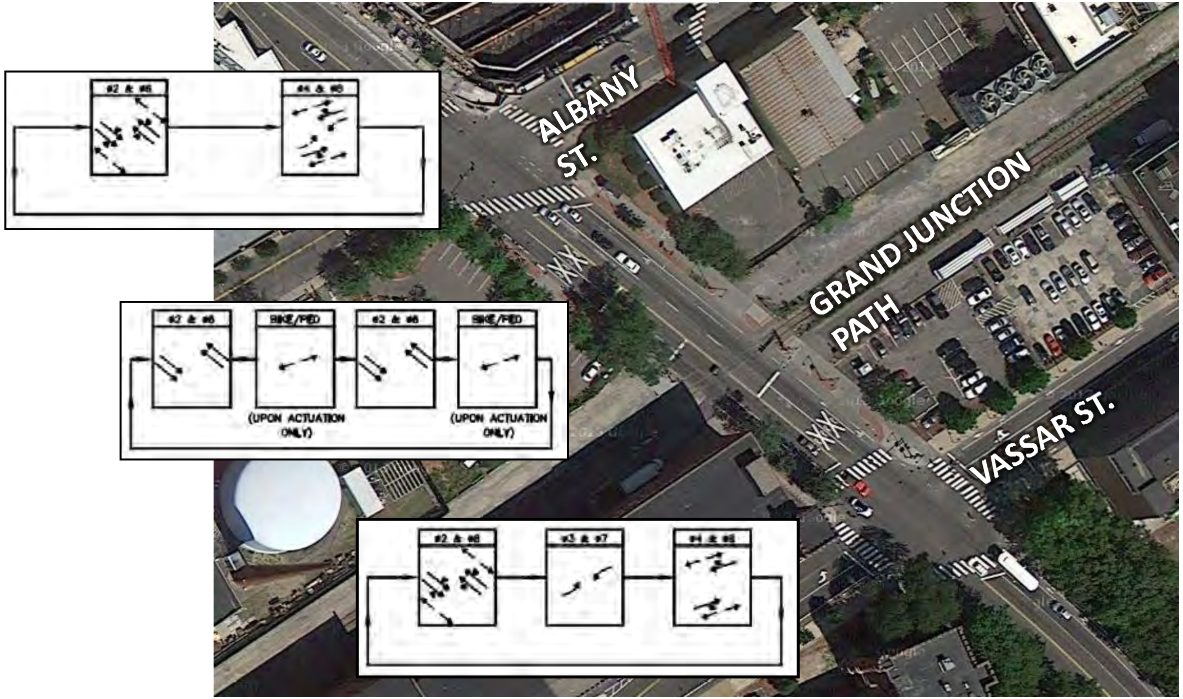
DRAFT
FOR INTERNAL REVIEW

Mass Ave: Full Cycle Length, Actuated


ALBANY ST.
GRAND JUNCTION PATH
VASSAR ST.
#2 & #6
#4 & #8
#2 & #6
BIKE/PED
(UPON ACTUATION ONLY)
#2 & #6
#3 & #7
#4 & #8

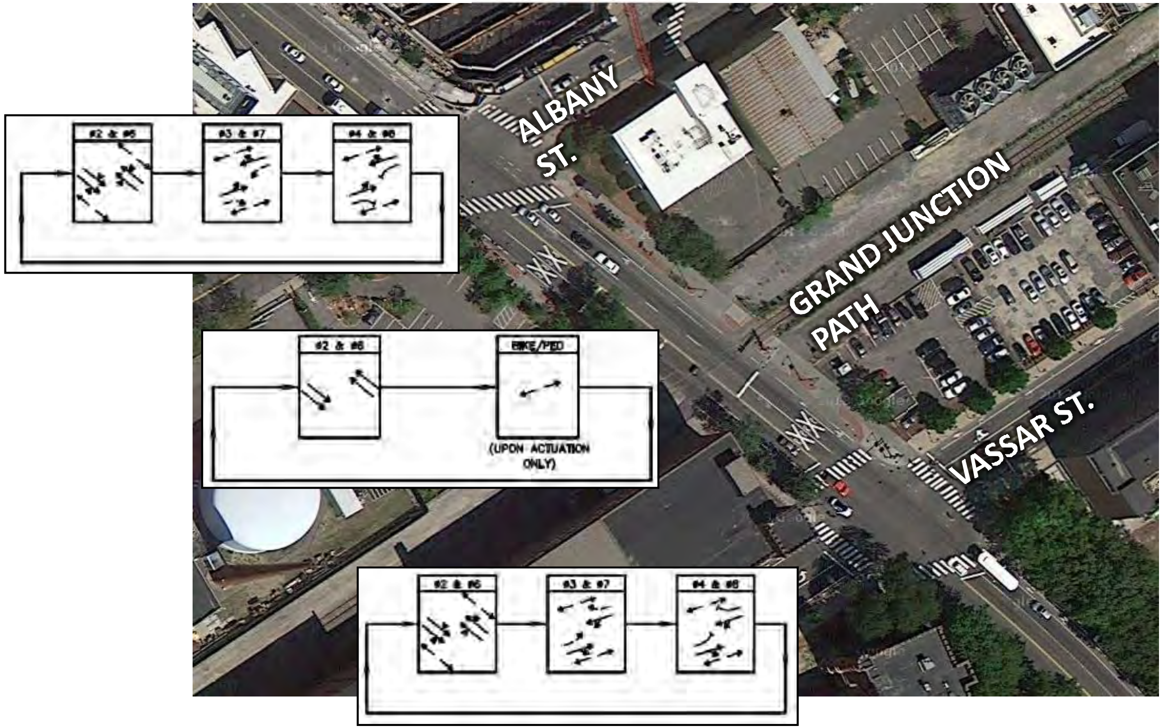
DRAFT
FOR INTERNAL REVIEW

Mass Ave: Half Cycle Length, Actuated


#2 & #6
#4 & #8
ALBANY ST.
GRAND JUNCTION PATH
#2 & #6
BIKE/PED
(UPON ACTUATION ONLY)
#2 & #6
BIKE/PED
(UPON ACTUATION ONLY)
VASSAR ST.
#2 & #6
#3 & #7
#4 & #8

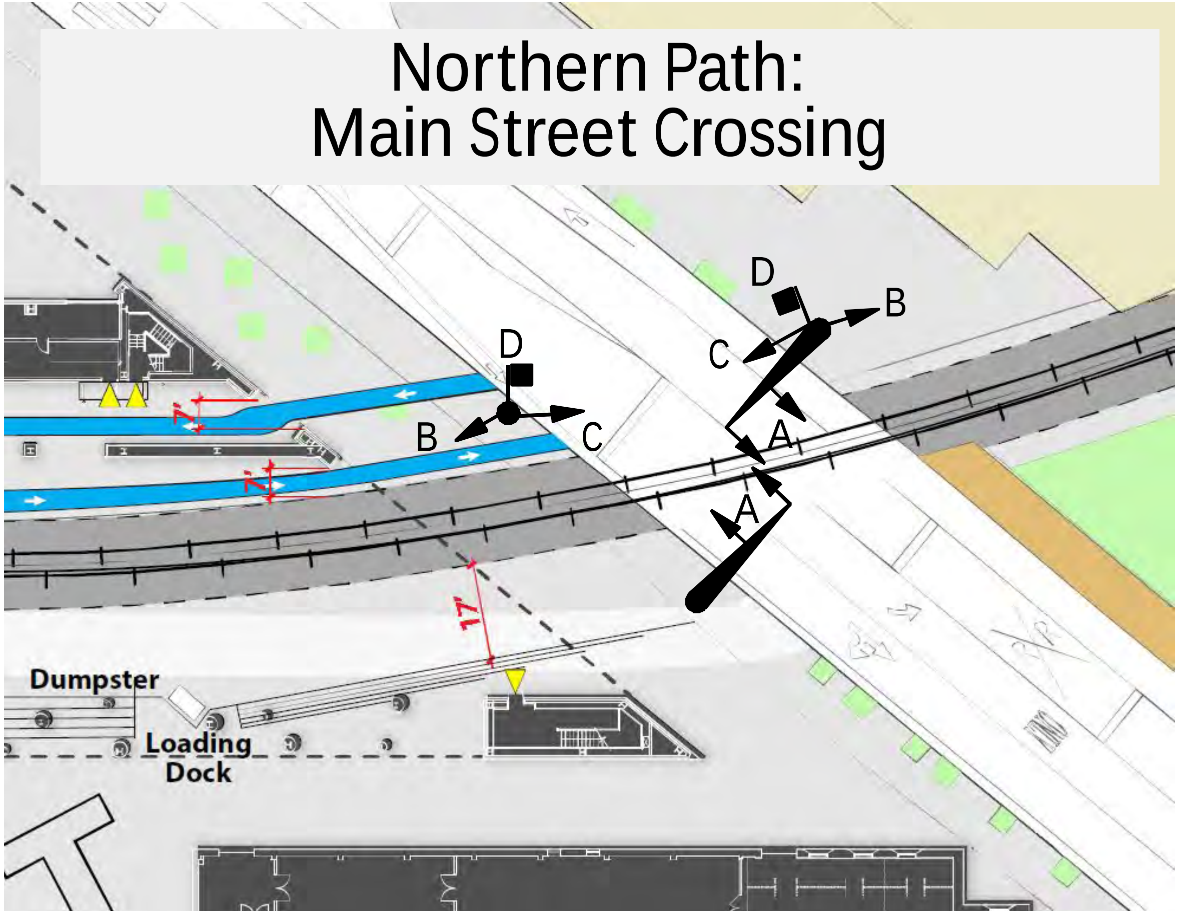
DRAFT
FOR INTERNAL REVIEW

Mass Ave: Full Cycle Length, Actuated, Restricted Turns


#2 & #6
#3 & #7
#4 & #8
ALBANY ST.
GRAND JUNCTION PATH
#2 & #6
BIKE/PED
(UPON ACTUATION ONLY)
VASSAR ST.
#2 & #6
#3 & #7
#4 & #8

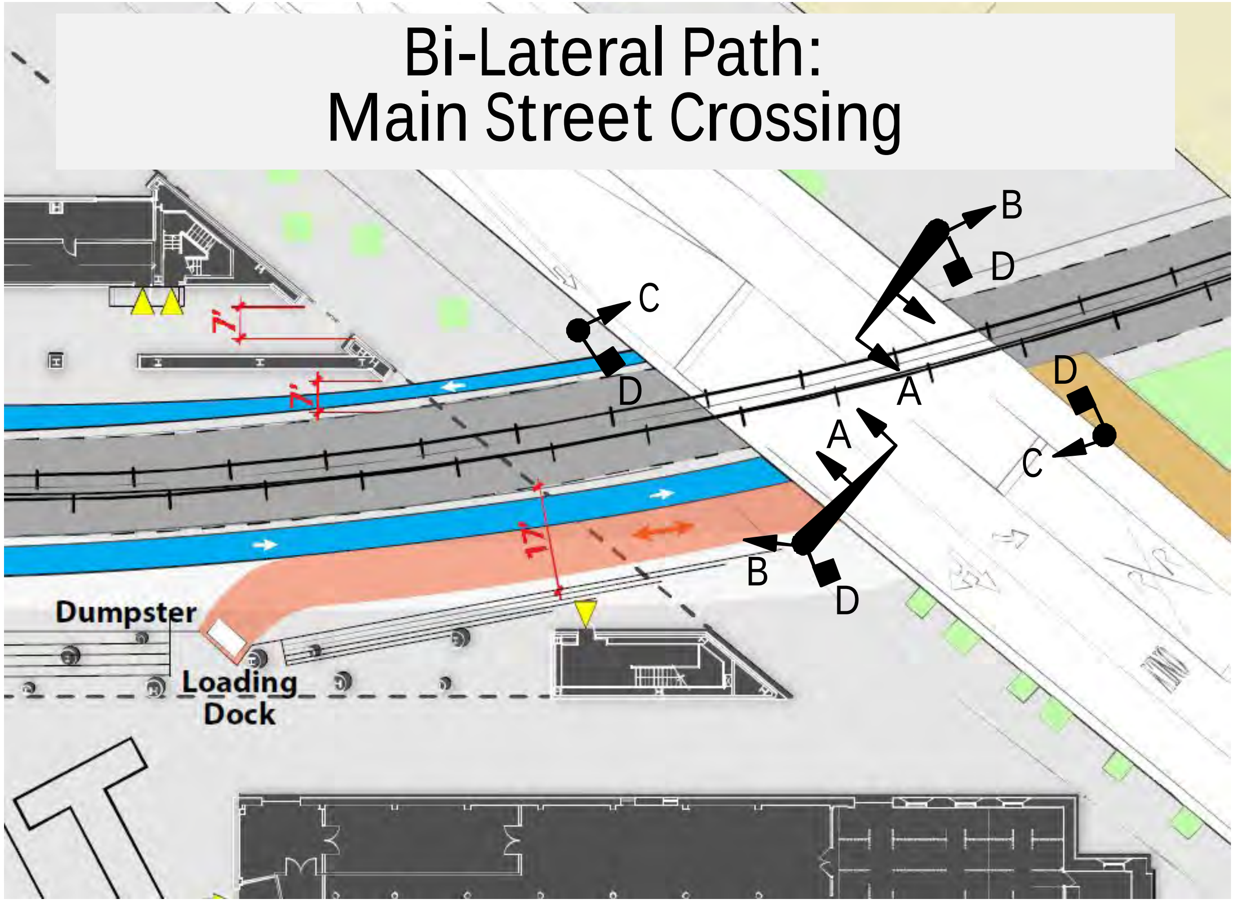
DRAFT
FOR INTERNAL REVIEW

Northern Path:
Main Street Crossing


D
B
C
D
B
C
A
A
7'
7'
17'
Dumpster
Loading
Dock

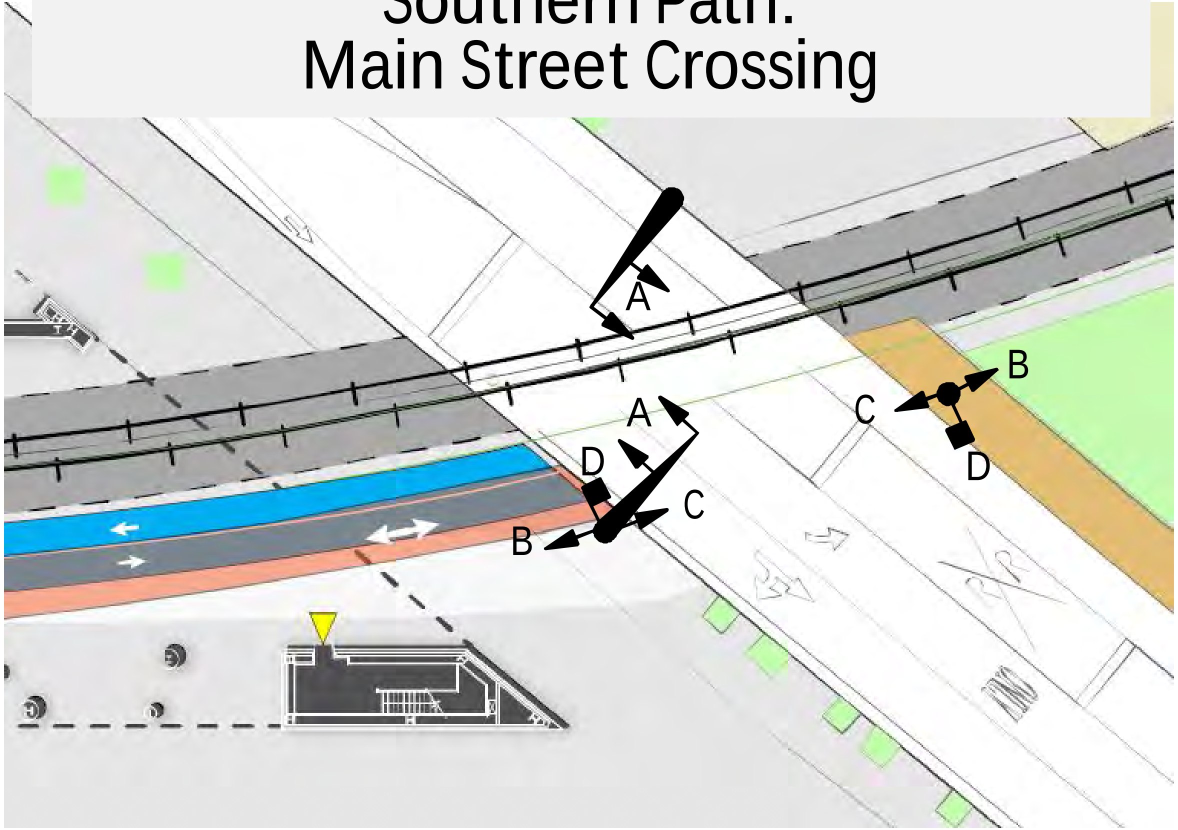
DRAFT
FOR INTERNAL REVIEW

Bi-Lateral Path:
Main Street Crossing


B
D
C
D
A
A
D
C
B
D
7'
7'
17'
Dumpster
Loading
Dock

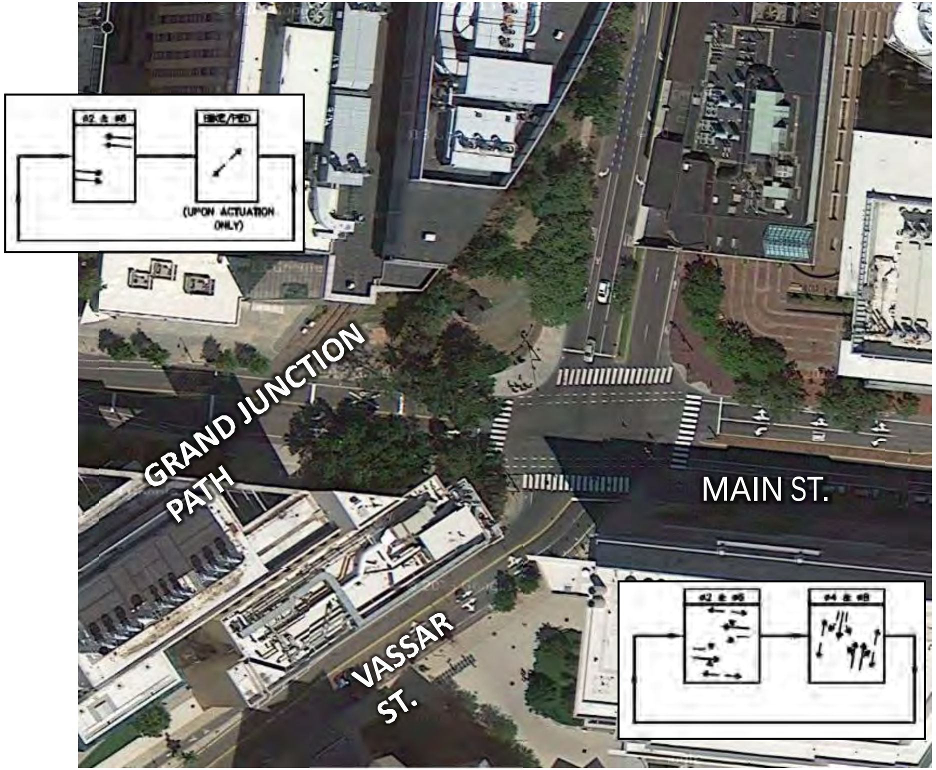
DRAFT
FOR INTERNAL REVIEW

Southern Path:
Main Street Crossing



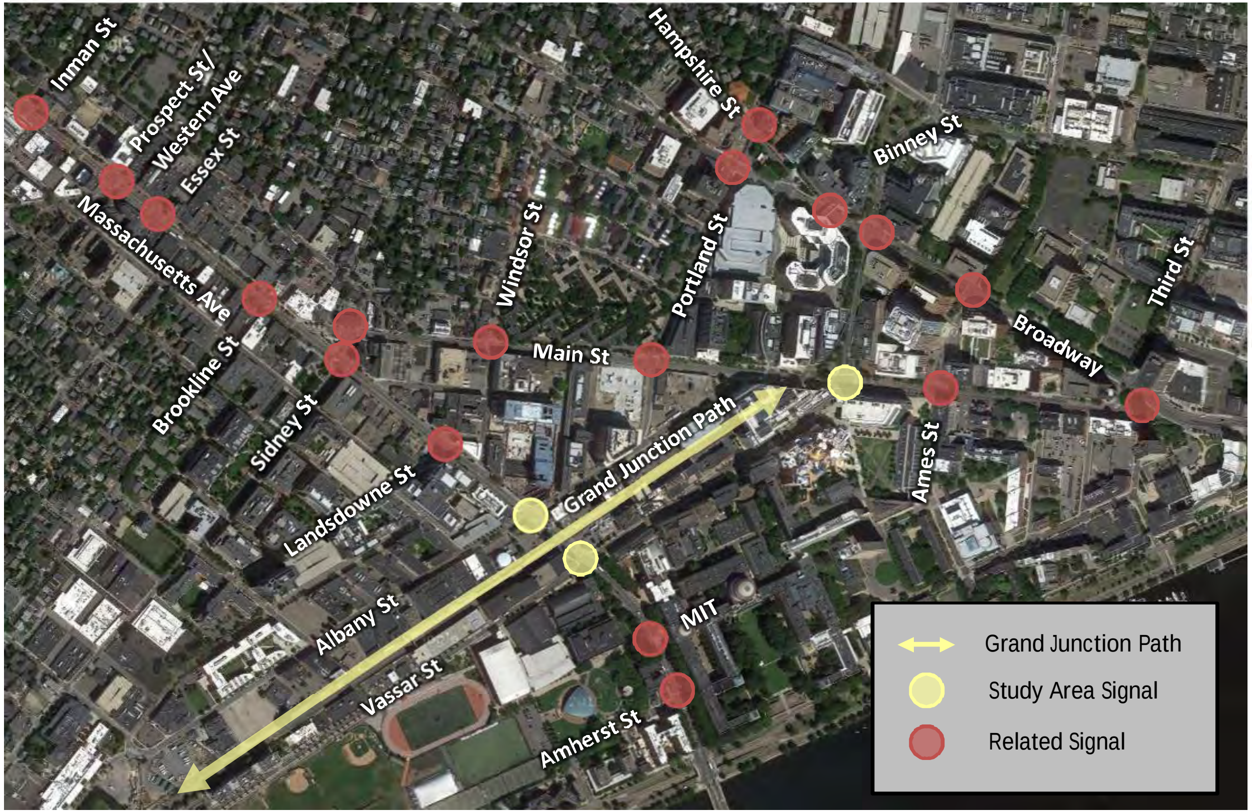
DRAFT
FOR INTERNAL REVIEW

Main Street: Full Cycle Length, Actuated


#2 & #6
BIKE/PED
(UPON ACTUATION ONLY)
GRAND JUNCTION PATH
MAIN ST.
VASSAR ST.
#2 & #6
#4 & #8

DRAFT
FOR INTERNAL REVIEW

Signal Timings – Modified Cycle Lengths


Inman St
Prospect St/
Western Ave
Essex St
Massachusetts Ave
Brookline St
Sidney St
Windsor St
Main St
Hampshire St
Portland St
Binney St
Third St
Broadway
Ames St
Landsdowne St
Grand Junction Path
Albany St
Vassar St
MIT
Amherst St
Grand Junction Path
Study Area Signal
Related Signal

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FOR INTERNAL REVIEW

DRAFT FINDINGS

- The Grand Junction Corridor should be considered as a series of links in a larger network that includes Vassar, Albany and cross corridor connections
- A multi-use path can work but with some areas of conflict
- Those areas of conflict can be partially mitigated or eliminated over time
- The use of the path as a regional connector is dependent on future connections to the west and east

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FOR INTERNAL REVIEW

END OF SHOW

This material was presented to the Grand Junction Corridor Study Advisory Committee with a narrative supplementing the graphics included here. We have attempted to summarize the key points of that narrative as boxed text on most of the images.

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FOR INTERNAL REVIEW

Appendix H

Notes from Materials Management Meetings

KLEINFELDER
Bright People. Right Solutions.

MEETING MINUTES

DATE OF MEETING: May 13, 14, 15, 19, 20, and 23, 2014
ATTENDEES: MIT:

John Brisson
Kelley Brown
Larry Brutti
Kevin Connolly
Felix Deleon
Gary Desmond
Jamie DiGregorio
Karen Dow
John Engle
Mike Fahey
Michael Fahie
Matt Fulton
Pam Greenley
Jarrod Jones
Kathy Kasabula
Mike Kearns
Ed Lau
Richard Lester
Jim Long
John MacDonald
Craig Martin
Norman Magnuson
Greg Raposa
Melissa Shakro
Cheryl Vossmer
Scott Wade
Randall Wong
Anthony Zolnik

Kleinfelder:
Cat Callaghan
Tom Doolittle
Don Kindsvatter
Jonathan Parker

RECORDED BY: Cat Callaghan

SUBJECT: MIT Grand Junction Feasibility Study - Materials Management – Stakeholder Meetings

KLEINFELDER NO.: 20140204.001

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1. MIT explained that the Grand Junction (GJ) bike path concept was developed as a community supported response to alternatives such as a commuter rail line or ethanol transport. The development of a bike path would be part of a larger regional asset being established in Somerville, Cambridge, and Boston with an estimated 1000 cyclists per day. The traditional proposal has generally assumed the bike path to be along the north side of the tracks from Main St to CASPAR. Cost and disruption to activities are anticipated to be the limiting factors. MIT uses the corridor on the north and south sides of the track. Kleinfelder (KLF) will be conducting a feasibility study for the area. While there is currently no timeline for the project, MIT will likely make a decision whether or not to move forward within the next year or so.
2. KLF gave and introduction to Materials Management (MM) and asked stakeholders to describe what needs and issues there are regarding access points and activities, personnel movement, deliveries, services, maintenance, staging, storage, and parking and how the addition of a bike path might impact operations.
3. Largest trucks are liquid nitrogen tankers, other large vehicles include moving and facilities trucks and a crane which utilities uses once a year.
4. There are currently 150 active projects, and will be over 200 at a time in the upcoming years. There are many old buildings that require work and the NW sector is a focus for renewal. Current space uses are due to lack of available space on campus. There is a conceptual plan to upgrade electrical services about 30’ off of buildings. There will likely be 600+ workers on the MITnano project.

5. The project management group has no issue with a bike path as long as the drive remains open. This group would like to be updated with findings of the KLF study to use as a planning tool.
6. The city of Cambridge has reports regarding bike accidents in the area. It was noted that the intersection of Mass Ave. and Vassar St. is one of the most problematic areas in the city for bike accidents. Traffic engineers are looking at the crossing of Mass Ave to determine possible solutions.
7. Vassar St. is being looked at as a possible alternative bike route although it has more curb cuts than is desirable.
8. The plans for the Cambridge part of the path have not been developed.
9. There is community garden space along the side of the parking garage, it is currently closed due to construction.
10. Fire lane between Mass Ave. and Main St. must be maintained as per an agreement with Cambridge.
11. The Ringling Brothers circus uses the main track every year in October for 7-10 days for shows at North Station, it is the closest the elephants are able to get. Elephants are currently trucked, not walked to North Station. The circus requires the use of dumpsters.
12. The tracks are currently used at 4pm, 11pm, and occasionally 10am. Tracks may be used for light rail in the future with a stop at MIT. There are no gate arms and there are some concerns that the trains are too quiet for safety.
13. Building 46
    a. At the dock there are four bays: two dumpsters, one for animal bedding, and one for building waste, and two loading bays, which trucks back up to. The dumpsters are picked up every other day. Recycling is stored on the dock. The door has standardly been left open during operational hours without issue. In the near future, there will be a sensor which will close the door after 10 minutes of inactivity.
    b. Deliveries are daily. All bedding, food comes through loading dock. Deliveries of animals come in on a truck; deceased animals are packed in the lab and brought out in discreet boxes. Deliveries include an Airgas truck, mail services, FedEx, etc. Airgas is the largest truck. Most deliveries go to the dock, but mail and small deliveries sometimes come from the street. The Building 48 dock is sometimes used for convenience. Overnight deliveries are not received..
    c. There are no legal spots within the dock and three designated spots outside the dock near the donation boxes. Contractors and service vehicles park under the atrium in illegal spots under quench lines. There have been no quenches in the past seven years, in the case of MRI failure, there would be a white vapor. If parking were enforced, vendors would likely park at the nearby parking garage at Tech Square. Catering will park at the dock, but typically asked to move. Department of Comparative Medicine (DCM) has an unmarked cube van in one of the designated spots, which is used for inter-building animal transfers to Building 68. The other two legal spots are 30 minute parking, but this is not enforced and building users park there all day.
    d. Bikes and motorcycles are parked under the atrium, there is also a bike storage room adjacent to outdoor parking.
    e. Pedestrians with card access come in through door by the garage and go up the freight elevator.
    f. The walls are removable under the atrium on the northwest side to allow large equipment to be moved into the building. Most people who enter the building work there.
    g. Access is required for changing osmosis drums on the south side under the atrium. The average truck is approximately 20ft long.
    h. There is a fire lane under the atrium.
    i. Lab renovations are consistent.

   j. Utilities requires access to underside of bridge once a year for maintenance.

14. Building 48
    a. Deliveries are primarily for researchers. The dock is busiest at approximately 11:30am to noon. Receive mail and packages from Stata shipping and receiving daily, which gets all ground and second day mail. An 18 wheeler can fit in the loading dock if backed in from the street. Office furniture, catering, and plants for Building 46 and 48 use the Building 48 dock. Most other goods are brought from 46.
    b. Dumpster is removed three times a week.
    c. Traffic in the area is one way, but vehicles, including police, have been known to go the wrong way. Signage may need to be altered.
    d. Bikes are occasionally locked to the dock gate, but bikes around the dock are not typically an issue and would prefer more room for bike storage.
    e. Increased traffic would not be a concern as long as dock access was maintained. Currently the building is open 8am to 6pm Monday through Friday, with card access at other times, but this may need to be reevaluated

15. Building 44 - Lab for Nuclear Science
    a. Labs and gas cylinders are adjacent to the overhead door. Most of the building is office space, but there are some labs on the first floor.
    b. Parking around rear is not associated with the building. Parking for the building is alongside the building, including a department vehicle.
    c. Mail services and FedEx, etc. come through the front door, as does waste and recycling. Trucks will park on the street for access.
    d. Mark Belenger is the contact for the student shop.
    e. There is little-to-no presence on the GJ and would have no issue with a bike path on either side of the tracks.

16. Building 41
    a. Deliveries of helium are 2x per week, trailer is parked right outside of parking lot. The tractor trailer is backed in and the trailers are switched. This is typically done in the morning. The biggest issue is when one gives off a lot of gas. Liquefied helium is distributed around university. The liquid nitrogen tank is used as a dump and is provided to rest of campus on two department trucks. Deliveries on tanker trucks are not scheduled, if trucks can't make deliveries, then they lose $ 500-1000. It is possible to schedule deliveries, but can keep prices down by having a flexible schedule. Would like a gate or barrier as long as gauges and pipes are accessible. Failures in piping systems cause a discharge of gas, it is not dangerous, but it is expensive.
    b. Emergency access to fire lanes must be maintained
    c. Waste: some off of back sides, acetone bottles, facilities waste, occasionally some larger items. Custodial services handles waste.
    d. Space is being changed from labs to desk space. Desks and other furniture will have to be brought it.
    e. There are vertical vents off of building 41, 12" line
    f. The building is considered to be soft and anticipated to be rebuilt in the future.

17. Building N9
    a. Doesn't have many deliveries, but when there are goods come from Albany St. and are brought through the roll up door or main doors. Deliveries consist of five gallon pails of rocks and sand brought in from the field, which are prepped and then brought to building 54 using a department van.
    b. There is not access to GJ except by climbing over the fence.
    c. Parking lot is typically used by building 10.
    d. Building is expected to be replaced in the next 20 years
    e. No issues with bike path development
18. Building N10
    a. School of architecture and planning and an underused vandergraph generator
    b. Doesn't have many deliveries, but when there are it is from the Albany Street side. This is not projected to change when another department moves in.
    c. There is not access to GJ except by climbing over the fence.
    d. Construction trailers sometimes use area between the fence and rail, facilities and utilities also access the space. When used it is for staging purposes.
    e. The parking lot is used for large scale architectural models and some parking for building 10.
    f. Recycling and waste are brought out through the front doors.
    g. Building is expected to be replaced in the next 20 years.
    h. No issues with bike path development.
19. Metropolitan storage
    a. There is a dock at the rear by the tracks, trucks can back in, but there is no room to pivot. It is not currently active, but will likely be at some point in the future as there is currently a conceptual plan to turn the building into retail and residential space. Would eventually like to have room for two vehicles to back up to improve scheduling. Waste and recycling will need storage space and area for pickup. Rear of building would likely be a means of emergency egress in the future.
    b. See no issue with bike path, but do not advise having it on the south side due to narrowness of area. It was stated that the current space between building and rails is confining as is.
20. Building NW12
    a. There is a fence to prevent contractors due to security procedures. NRC approves security: the emergency planning zone and evacuation for reactor failure is 68 feet from surface of containment, while the fence is 45 feet from the reactor. The fence gate is almost never used.
    b. Liquid CO2 is delivered twice a week around 5-6am, on a box truck to a spigot outside the fence. Years ago it CO2 was delivered on street side, but there were complaints from residents about noise. The cryogenic pumps on the trucks are loud. The truck could be there at the same time as bikers.
    c. See no issue with the bike path as long as there are no benches or other features that would encourage stopping.
    d. Use overhead doors on Albany St. for deliveries.
    e. Cameras are for watching the reactor.

21. Buildings NW13, NW14, NW15, NW20, NW21

    a. At NW13-15: Orange tank is helium, white thank on the side is helium, 3rd tank is heating hot water, utilities (silver), there is a small diesel tank for the generator, which is the emergency backup for substation and phones. Diesel is filled once a year or so, may be replacing system, then the tank would be unnecessary. At NW21: there is secondary oil storage, a vertical liquid nitrogen tank at corner of 21, and flammable storage, which must be kept outside.

    b. An a humid day, liquid nitrogen tanks can offgas nitrogen, it is not hazardous, but looks like fog and dissipate go up because it is cold. If it was heated it would dissipate, and a system can be designed to do that.

    c. Emergency diesel generators are tested a couple times a year and are very loud. Mufflers could be added to help dampen the sound.

    d. Cameras are used as a deterrence against vandalism and vagrancy, they are not monitored.

    e. Nitrogen is delivered 3x per day. It is a dump tank, so deliveries can take place at any points in the day, though there is an unsigned agreement that it will take place within particular hours. The deliveries could be scheduled, but it would be more expensive. Trucks are too large to turn around enter off Mass Ave. and exit to Albany St. This happens for half a year or less as it relies on federal funding.

    f. Radiation shielding is being stored near tracks, but can be moved. There is also gated storage with a concrete pad, which can be moved. Bulk storage can be moved, it would be difficult to move the tanks

    g. Over time there will be interest in upgrading utilities to accommodate new experiments.

    h. Contractors park where they have room to do so.

    i. Would like a bike path in the area so that there is more police coverage and better maintained access. Will require a fence with barbed wire for safety purposes and maintained access to tanks and gauges.

22. The crossover at NW15 and NW20 is stated to only be used by 40-50 pedestrians per day, because of newer crossover at NW21 and NW30 is more convenient which is estimated to be used by over a thousand graduate students per day.

23. W64 – Daycare Center
    a. The playground goes right up to the rail fence.

    b. Would like a bike path to bring people to the area, but do not believe it would work on the south side.

24. Mail services

    a. Use a 14' box truck or smaller vehicle. Mail deliveries to the GJ area are once a day, typically between 11am and 1pm. Packages are picked with mail delivery.

    b. West of Mass Ave is delivered from the street. East of Mass Ave is delivered from GJ side, except for N9 and N10. 41-44 has lower volume but occasionally large items. 46 is delivered from the loading dock. N9 and N10 have little mail.

25. Repair and Maintenance

    a. Require access to mechanical spaces at Buildings NW13, NW14, and NW21, this is largely done out of convenience from the GJ path, but could be accessed from the front on the building. The exception is when large mechanical equipment is brought in and cannot be fit through the front doors of a building. Parking for mechanical repairs is on the GJ dirt path, but for other jobs, service people park on the streets, driveways or at the dock near NW16 or under the Building 46 bridge in illegal parking spaces. Itw was noted that comparative medicine was the primary user for the illegal parking under Building 46. If GJ parking were not allowed, would park on the street.

   b. There are manholes along the path that require access.

26. Custodial Services
    a. Their standard access is through the front door.
    b. Deliveries of chemicals and toilet paper are received at the docks of Building 46, NW21, and NW13.
    c. There are dumpsters at NW13, NW14, and Buildings 41, 42, and 48. In the future would like to park three recycling trucks behind Building 41 by roll-off dumpster, each at 120sf.
    d. Contractors illegally dump along GJ. People in the surrounding area bring household trash to dumpsters.
    e. The GJ area is accessed via Mass Ave.
    f. There are no composting or recycling initiatives in the works that would require GJ access.
27. Grounds
    a. Once it is built, there will need to be access for landscaping, maintenance, mulch delivery, removal of organic degree, snow plowing (currently everything is plowed up until recycling area), and would require a minimum access width of 7 ft. A bike path would require more attention, more plowing trips, and would be a higher priority.
    b. Snow is just plowed to the side away from the tracks, it is also piled at the corner of 42 and 44, but would have to be removed if it became a high access area. Currently under obligating to take care of crossing at NW21, but plow all crossings.
    c. Would prefer simple local plantings to reduce maintenance.
    d. The concept of responsibility of maintenance and waste removal was brought up. How far would MIT's responsibility be? What would be the Town of Cambridge's role be? It was noted by Utilities, that if MIT has the responsibility, closures and work could go through a single contact point at MIT.
    e. Pests on the tracks are an issue, there are many rats and rabbits. The daycare center had to be specially rat-proofed. Other animals in the area are raccoons and turkeys.
28. Parking
    a. In north and west, there is no parking, parking after nw30, is owned by Novartis or someone else. There is parking behind Buildings 42, 44, and 46, on the south side and motorcycle and bike parking on the north side at Building 46. There are no designated parking spots on the north side. N10 lot will be removed in the future.
    b. It was stated that parking can be enforced, but is not currently as there is no reason to do so.
29. Safety and Security
    a. The area is not noted to be any more or less dangerous as the rest of the campus. It was stated that development would likely decrease issues with the homeless population, but that upkeep would have be equivalent on MIT and Cambridge sides of the path or issues could increase. Issues with CASPAR are less of an issue than they were 10 years ago, but it was stated to be a cyclical issue. Benches and other places for the homeless population to claim should be avoided.
    b. GJ is routinely patrolled down to NW30 by car to Fort Washington and by foot beyond. If it were a bike path, it would seasonally be patrolled on bikes except in inclement weather, much like Vassar St. West of

Mass Ave. MITPD would like access/exit at both ends of MIT property or a rotary at west end as well as maintenance of the access at NW30. Cruisers have equipment needed and so officers do no to like to leave their vehicles to patrol.

   c. Would like blue emergency phones along path and lighting at night. The blue phones could be associated with CCTV cameras. CCTV footage would not be monitored, but could be used for investigative or emergency purposes. An addressing system would be helpful to reference in case of emergency.
   d. Fire trucks, ambulances, and police will all require access. Methods to stop vehicles from entering bike path would also hinder emergency and patrol access.
   e. Hazardous materials are not seen as a concern, as it is currently an uncontrolled situation and there have been no issues.
   f. MITPD has no issues with the creating of a bike path, and would like the area to be developed.

30. New Co-gen Building
    a. New Co-gen building will be built, starting this spring between Building N16 and the parking garage with a new 40' wide bridge with a control room and a 15' shaft. An air inlet will be 24' above the path and 10' deep. Air intake will not be strong enough to detect at ground level. A room on the south east corner will belong to NStar, adjacent is a metering room. These are the only entrances on the GJ side of the building except for emergency egress. Limited access along GJ will be necessary. It is the only new project in the works for utilities.
    b. Will be built between 2017 and 2018. Utilities work is predicted to go to 2020.
31. Building N16
    a. Requires annual maintenance from utilities from a crane for a one week duration. Three new cooling towers will be going over the bridge and one replaced, these are placed with a crane. It was noted that new work required heavier materials than maintenance parts. A rooftop crane may be placed on the roof and will mitigate the need for a crane to be on the GJ.
    b. There is a small loading dock on the south side of 42 that is used to bring large goods into 16. Salt storage is located here. A vehicle stops for 2-3 hours and unloads either solid or liquid salt, typically every other week, but can be up to twice a week.
    c. The cooling towers west of N16C are scheduled for demolition in 2018. GJ area will not be available until after 2018.
    d. Door at N16C behind fence will require secure access to be maintained.
    e. If the track is moved N16 will require impact guards. There is also a security concern in this area of places to hide.
32. Water lines
    a. Most of the length of the steam pipes and condensate pipes are along the north side of the tracks.
    b. Steam line pit at the parking garage will be open until November, but would not typically have it open for 10 months. Typically steam lines take 2-4 months to replace as the parts are custom made after measurements are done. The steam lines behind NW12-NW14 will need replacing. Work can be done at night, but it costs more, welding could be an issue for passing bikers.
    c. Steams lines are anticipated to be replaced by medium temperature hot water pipes, which are pv and fare more flexible in terms of placement and repair. A new loop will connect the include N16 building to the existing system to the south.

    d. Chilled water pipes last a half century or more without needing replacement.
    e. Intensive maintenance is done 2-3 times per year, other maintenance is less invasive requiring cones around the work area.

33. No natural gas lines in GJ
34. Fire protection has crossing near garage.
35. Electrical
    a. Duct banks are on the north and south sides. Manholes are on both sides along the GJ.
    b. New lines will be run from Mass Ave to the new Co-Gen building and back. There will also be new lines across rail crossing, a parallel system is needed to this, but its location is not yet known. Duct banks will be put in early in the construction phase (between 2017 and 2020). A spool truck will be there for one day to lay cables, following this access to manholes will be required.
    c. NW14 will eventually need additional power, but work has not yet been scheduled.
    d. There is a switch issue in that if NW 21 shuts down, NW14 and NW 15 will also shut down.
    e. Infill work will be done behind NW12-NW16 to add switch gears. This is currently in schematic design. The driveway will be closed for a year and a half while this work is done.
    f. New jacking pits at Mass Ave. are being planned to cross electrical lines from east to west. The schedule is for 9 months to a year, realistically the work at Mass Ave. may take 6 months and the rest of the work could take 3 months. Existing pits are 25' below grade. The earliest schedule could be in 2016-2017 when other electrical work is also being done. It is possible lines will be brought out to Albany St., but this is not confirmed yet.
    g. Jacking pit work will be done at Building 46 this summer or next
36. Is it possible to create a maintenance schedule to work with Cambridge? Can Cambridge provide an alternate route when bike path must be closed?
37. Plantings and benches could be disrupted by utilities work. Utilities would prefer to not be responsible for their replacement.
38. Drainage issues are an issue in the GJ area as it is a low point on campus, water ponds at N16 and can back up at new island at Albany St. and Portland St. Stormwater collection is being considered for use in the cooling towers.

Action Items

1. MIT to provide KLF with relevant information from SEMO.
2. MITPD to provide KLF with crime data.
3. Utilities and Planning to provide KLF with up-to-date utilities plans.

****

The minutes of meeting are the recollection of the author. If there are points or issues that are misrepresented and may benefit from revision, correction or addition, please forward your comments within three business days from the date of receipt to the author. Revised information will be issued or incorporated into subsequent records as appropriate.

Appendix I

Survey Monkey Results

KLEINFELDER
Bright People. Right Solutions.

M E M O R A N D U M

TO: File 20140204 – MIT Grand Junction Corridor

FROM: Don Kindsvatter

DATE: October 1, 2014

SUBJECT: Survey Monkey Questionnaire Results

As part of the project's public outreach, an open house was held on June 24, 2014 at the MIT Stata Center. The intent of the open house was to present an analysis of existing conditions to solicit feedback from the MIT community, regional stakeholder groups, and neighborhood residents. The feedback informed the upcoming design work. To supplement the input from the open house and to provide those who were unable to attend an opportunity to comment, a Survey Monkey site was set up with a series of questions about how people currently use the area for bicycling and how they envision future use in the corridor. Roughly 75 people attended the open house and 175 people responded to the survey. Printed questionnaires of the Survey Monkey were available at the open house and eight people completed these surveys; those answers were added to the Survey Monkey results which are shown on the following pages broken out by question.

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Q1 What modes and routes do you use to trave around the Grand Junction Corridor area?

Answered: 170 Skipped: 3

#	Responses	Date
1	Bike, car	7/17/2014 9:00 PM
2	Main roads	7/1/2014 7:23 AM
3	I walk along sidewalk orimarily	6/30/2014 4:30 PM
4	Bike or walk. Mass ave to Vasar or cross near 235 Albany then Vassar	6/30/2014 4:25 PM
5	I live on Bristol STreet and walk or drive on Mass ave, Main st, Binney and/or CAmbridge Street to get in or out of town	6/30/2014 4:20 PM
6	Walking, biking, car	6/30/2014 3:54 PM
7	I currently commute from Allston to Cambridge via Cambridge street to River Street for work. I also bike the Storrow Drive path to Mass ave.	6/30/2014 3:41 PM
8	Bike form BU Bridge to Building 36 via Albany, through Ft. Wash then along Vassar	6/30/2014 3:08 PM
9	Not many	6/30/2014 3:01 PM
10	Bike: Mass Ave, Main, Vassar in vehicle travel lane. Sometimes Vassar bike path, but too many conflicts	6/30/2014 2:56 PM
11	On bike primarily down Boradway	6/29/2014 9:41 PM
12	By Bicycle and MBTA Route 1 bus, occasionally walking. BU Bridge down Sidney St to Mass Ave. BU Bridge down Sidney to Putnam St. Mass Ave via Harvard Bridge to Paul Dudley White Bike Path. BU Bridge to Sidney to Mass Ave to Vassar St to Kendall Sq cinema.	6/28/2014 7:40 PM
13	I travel via bike on Mass Ave, Vassar, cutting across that rail line, sometimes I bike through campus.	6/26/2014 10:56 AM
14	Bicycle - I cross the tracks at Ft. Washington	6/25/2014 10:52 AM
15	foot, car	6/25/2014 10:51 AM
16	walking, biking (my own and Hubway), metro (bus + subway)	6/25/2014 10:37 AM
17	Vassar and Galileo Galilei, in the bike lanes.	6/25/2014 7:14 AM
18	cycling: Mass Ave, Vassar St, BU Bridge, Main St, Paul Dudley bike path	6/24/2014 11:05 PM
19	I mostly bike, and use Vassar St. and Galileo Galilei way every day on my way from work to gymnastics at the Zesiger Fitness Center.	6/24/2014 10:05 PM
20	Vassar Street by bicycle, *not* on the cycle track -- in the actual roadway.	6/24/2014 6:36 PM
21	Car, bike, and occasionally bypassing it via Bus/T	6/24/2014 5:20 PM

22	car	6/24/2014 5:08 PM
23	A connection should be made on Buick St. connecting the green line to the red. Get us off the green line ASAP. Currently no buses or safe bike routes. Let Bu share in the traffic mess they have created with over building the area! -Give an area for all types of transit.	6/24/2014 2:34 PM
24	bike	6/24/2014 11:08 AM
25	Mainly biking, sometimes walking. Use Ft Washington and the polka-dot crossing every day.	6/24/2014 9:14 AM
26	car, foot	6/24/2014 7:28 AM
27	In the past, I used Albany Street to travel by bicycle.	6/24/2014 7:13 AM
28	Walk and bicycle - Albany St, Mass Ave, Vassar St	6/24/2014 1:00 AM
29	Bike, car, foot.	6/23/2014 11:41 PM
30	I bike and walk morning & early evening, in and around MIT, Cambridgeport, the Hyatt.	6/23/2014 11:02 PM
31	Bicycle, bus, walk, rarely private auto. Longfellow, Harvard, & BU bridges. Mass Ave, Main Street, Hampshire Street, Cambridge Street, Vassar Street.	6/23/2014 12:40 PM
32	I dont usually use that rail corridor as it seems poorly developed and cutoff from both cambridge port and MIT campus	6/23/2014 12:14 PM
33	Vassar/Memorial drive: running, walking, biking	6/23/2014 10:33 AM
34	Walking	6/23/2014 10:07 AM
35	Walking and biking	6/23/2014 7:35 AM
36	Bike on vassar	6/23/2014 4:06 AM
37	Bicycle	6/23/2014 3:50 AM
38	Primarily bicycle coming from Inman Square. Travel on Broadway or Hampshire street and then cut through MIT property to reach Vassar (difficult connection due to tracks)	6/23/2014 3:45 AM
39	Walking and Bicycling	6/23/2014 1:19 AM
40	Bike, foot	6/22/2014 11:40 PM
41	Walking, Biking. Mass ave. Main Street. Vassar.	6/22/2014 10:46 PM
42	Walk, bike	6/22/2014 10:08 PM
43	Walking, bicycling, bus	6/22/2014 9:46 PM
44	bicycling, car. From Kendall: Albany, Waverly, Henry, hellacious rotary, BU Bridge. Reverse: Mem drive/Vassar	6/20/2014 11:52 AM
45	bike, walk, auto	6/20/2014 11:40 AM
46	Walking and primarily.	6/20/2014 10:26 AM
47	Cycling via Vassar or Albany	6/20/2014 9:27 AM
48	bike, walk, bus	6/20/2014 8:46 AM
49	Bicycle - Broadway, Galileo, Vassar, Mass Ave Red Line	6/20/2014 8:14 AM

50	Vassar Street	6/20/2014 6:31 AM
51	Vassar Street	6/20/2014 6:31 AM
52	Bicycle. BU Bridge > Brookline St. > Granite St. > Riverside Rd.	6/20/2014 2:36 AM
53	Bike, walk. Streets	6/19/2014 11:31 PM
54	Mass Ave, Western ave, BU bridge, Comm Ave, Main Street, Cambridge Steer, Broadway	6/19/2014 9:51 PM
55	Bicycle, transit, walk (in order of frequency)	6/19/2014 9:28 PM
56	walk/ted line	6/19/2014 8:27 PM
57	I bike up and down Vassar Street and Amherst Alley.	6/19/2014 8:16 PM
58	bike, T	6/19/2014 7:43 PM
59	I often travel and visit different points of interest in the area roughly between BU and Cambridge Galleria. I travel mostly on bike, and there is no public transport going in this direction (NE-SW). Adding a train together with bike and walk path would be great!	6/19/2014 7:07 PM
60	Bicycle: Sydney, Main, MemDrive Bus: #1 #47 #CT1 #CT2 Walk: side streets etc	6/19/2014 6:46 PM
61	bicycle	6/19/2014 12:12 PM
62	Bike, walk	6/19/2014 8:01 AM
63	Walk, drive	6/18/2014 7:28 PM
64	bike, walking, car	6/18/2014 4:28 PM
65	By bike, Vassar St. (near MIT oval) to Ames St. & Broadway.	6/18/2014 1:12 PM
66	Primarily, I travel by bus. Sometimes by bike. Bus routes are too long, and bike routes are not safe.	6/18/2014 9:08 AM
67	Walking, biking and driving	6/17/2014 7:57 PM
68	bicycle primarily, but also transit and walking and occasionally driving	6/17/2014 5:30 PM
69	Foot, bus, MBTA, car	6/17/2014 4:17 PM
70	Bicycle	6/17/2014 1:59 PM
71	Walk, bike and drive.	6/17/2014 1:07 PM
72	mass ave over bridge to comm ave.	6/17/2014 6:58 AM
73	Bicycling on Vassar, Albany, the DCR bikeway on the Charles, Sydney, and back ways in Cambridgeport.	6/17/2014 6:00 AM
74	I almost always bike, and I would probably take the Charles River path.	6/16/2014 10:58 PM
75	Albany street mostly	6/16/2014 10:44 PM
76	Bike, mostly Broadway and Cambridge St, or Pearl St. If I happen to be in Kendall and need to get to BU I take Vassar but it's rare.	6/16/2014 10:29 PM
77	Bike, foot	6/16/2014 10:02 PM
78	Biking and EZ ride shuttle when I can't bike. Brookline, Pacific, Main, Broadway streets.	6/16/2014 9:36 PM

79	Walk, bike car	6/16/2014 9:00 PM
80	MBTA, walking, car, motorcycle	6/16/2014 8:29 PM
81	bicycle	6/16/2014 8:13 PM
82	I go over the BU bridge from and to either essex or carlton and from/to brookline and granite street - this is my daily route to work - mostly by bike, sometimes by car.	6/16/2014 7:22 PM
83	Biking	6/16/2014 6:04 PM
84	Walking and biking are most common. Occasionally drive on Albany and Vassar.	6/16/2014 5:15 PM
85	Bike, foot	6/16/2014 5:14 PM
86	Car via Memorial Drive and/or Vassar St Foot/bike via surrounding streets	6/16/2014 3:44 PM
87	Bike, walk, T. I go everywhere, but mostly on routes where there is a bike path or cycletrack.	6/16/2014 3:37 PM
88	Walk. bicycle, bus, car.yes	6/16/2014 3:36 PM
89	The modes and routes I used to travel around the Grand Junction Corridor area was taking the EzrRide Shuttle.	6/16/2014 3:26 PM
90	bike, walk	6/16/2014 3:23 PM
91	bike and car	6/16/2014 2:33 PM
92	Bike, foot, T	6/16/2014 12:37 PM
93	Bicycle, BU Bridge, Mass Ave, Brookline Street, Memorial Drive, Broadway	6/16/2014 12:14 PM
94	I travel from Somerville through Kendall Square, and over the BU bridge to access the Allston area.	6/16/2014 12:10 PM
95	Primarily Vassar St and Mass Ave	6/16/2014 11:40 AM
96	Currently on regular bicycle friendly streets in the area.	6/16/2014 11:39 AM
97	Bike.	6/16/2014 11:15 AM
98	Bike / MBTA	6/16/2014 10:00 AM
99	bike	6/16/2014 9:46 AM
100	Vassar, mass ave	6/16/2014 9:38 AM
101	Bike, walk, bus	6/16/2014 9:23 AM
102	bike	6/16/2014 9:18 AM
103	Bicycle on Vassar Street	6/16/2014 9:07 AM
104	Bike, T, walk	6/16/2014 9:07 AM
105	Mass ave, memorial drive, brookline dr, elliot st	6/16/2014 8:43 AM
106	Vassar Street. Scary, but direct.	6/16/2014 8:31 AM

107	Bicycle. I currently take Albany Street. Or Pearl/Brookline Streets depending on the direction. Pearl is not ideal since it's got no bike lane and has a million potholes. Brookline is pretty good, but not direct to go from BU bridge to Kendall. Vassar Street is not connected to the rest of the western side of Cambridge except through Mass Ave or at the rotary near BU bridge - it's not a convenient road to take even though the bike lane there is very good.	6/16/2014 8:03 AM
108	In that area I'm typically cycling or walking. Sometimes I'm on a bus or in a car.	6/16/2014 2:53 AM
109	Bicycle predominantly (weekly), then walking (monthly), with an occasional car (few times a year).	6/16/2014 2:20 AM
110	Vassar Street cycletrack, Mass Ave bike lane, neighborhood streets through Cambridgeport, BU Bridge.	6/16/2014 12:27 AM
111	car foot and bike	6/16/2014 12:09 AM
112	Bicycle. Mass Ave.	6/15/2014 11:44 PM
113	Portland st	6/15/2014 11:29 PM
114	I bicycle on Commonwealth Ave, and also ride the subway (B-line)	6/15/2014 11:05 PM
115	Bike	6/15/2014 11:02 PM
116	Bike, run	6/15/2014 10:59 PM
117	Western ave and Mem drive	6/15/2014 10:47 PM
118	Bike	6/15/2014 10:17 PM
119	Bike (my own, and Hubway), bus, car, subway, commuter rail, walk.	6/15/2014 10:16 PM
120	T, walk, bicycle	6/15/2014 9:52 PM
121	Bike	6/15/2014 9:46 PM
122	BU bridge Brookline St Mass Ave	6/15/2014 9:35 PM
123	Charles river Bike path	6/15/2014 9:31 PM
124	car and bike, sometimes T	6/15/2014 9:30 PM
125	I bike around this area on many routes both parallel and perpendicular to the river.	6/15/2014 9:19 PM
126	Bicycle	6/15/2014 9:11 PM
127	I currently bike down Sydney St. to the BU Bridge on my daily commute to the Longwood Medical area.	6/15/2014 9:09 PM
128	Bike commute-Newton to Kendall Sq.	6/15/2014 8:58 PM
129	BU Bridge Vassar St. Albany St. Broadway	6/15/2014 8:52 PM
130	Walking	6/15/2014 8:40 PM
131	I either walk or bicycle and often use Memorial Drive, Main Street, Massachusetts Avenue, and a hodgepodge of North/South streets.	6/15/2014 8:40 PM
132	Bikes, Walking	6/15/2014 8:37 PM
133	I bike on city streets.	6/15/2014 8:32 PM
134	Most car	6/15/2014 8:30 PM

135	Bike, walking	6/15/2014 8:24 PM
136	I bike via Vassar Street and walk on Portland Street,	6/15/2014 8:22 PM
137	Bike, car, T	6/15/2014 8:14 PM
138	bicycle, on Vassar St	6/15/2014 8:13 PM
139	Bicycle	6/15/2014 8:11 PM
140	Western Ave (Allston) River st (Cambridge)	6/15/2014 8:10 PM
141	Bike, central square to BU bridge via Pearl st. Take commonwealth if going to allston.	6/15/2014 8:09 PM
142	Bicycle	6/15/2014 8:05 PM
143	Mass Ave., Vassar St., and Mem Drive	6/15/2014 7:58 PM
144	Vassal Street by bike when returning to a Revere	6/15/2014 7:44 PM
145	Bicycle on mass av and along river paths	6/15/2014 7:41 PM
146	Mass ave, always	6/15/2014 7:38 PM
147	Any road that is best for riding my bicycle any given day. It varies based on traffic.	6/15/2014 7:37 PM
148	Bike	6/15/2014 7:25 PM
149	Riverfront path, car	6/15/2014 7:24 PM
150	Bicycle	6/15/2014 7:22 PM
151	Mass Ave & the paths on the Charles	6/15/2014 7:20 PM
152	cycle	6/15/2014 7:17 PM
153	Brookline St, Mass Ave, Broadway, and Galileo Galilei Way	6/15/2014 7:14 PM
154	bike, bus	6/15/2014 7:06 PM
155	automobile and bicycle	6/15/2014 7:04 PM
156	Vassar st bike lanes, or drive car on mem drive	6/15/2014 7:04 PM
157	Bike, walk, bus across BU bridge, along Vassar St, up Mass Ave, through Kendall area	6/15/2014 7:00 PM
158	Bike	6/15/2014 6:59 PM
159	Bicycle. I use the river path, Mass. Ave., and the Vassar Street cycle track.	6/15/2014 6:45 PM
160	Bike walk transit	6/14/2014 7:05 PM
161	Walking, biking, driving	6/14/2014 4:18 PM
162	Bicycle, on foot, bus, subway	6/14/2014 1:24 PM
163	I have a consulting job in Kendall Square - this would be a great addition to the area. I bike to work on occasion and could also use this for inline skating (rollerblading).	6/14/2014 10:51 AM

164	Bike on mass ave, path along river/memorial drive, or prospect ave and river st	6/14/2014 10:17 AM
165	Biking	6/14/2014 10:03 AM
166	car, bike, bus. Vassar St, Albany St, Mass Ave. Pretty much walk everywhere.	6/14/2014 8:42 AM
167	Bike/ped along Vassar Street, arounf MIT, and twin Cities.	6/14/2014 8:21 AM
168	Bike and Fulkerson St + Binney St	6/13/2014 9:49 PM
169	transit, car, bike	6/13/2014 2:58 PM
170	I cross at Fort Washington and Pacific Street on a regular basis on foot and on bike. I use the Vassar Street cycle track, and sometimes continue up Galileo Way on bike which is not very comfortable. I also travel across the BU Bridge frequently, which has multiple areas that are uncomfortable on foot, and is very uncomfortable on bike.	6/13/2014 1:29 PM

Q2 Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Answered: 171 Skipped: 2

#	Responses	Date
1	yes	7/17/2014 9:00 PM
2	Yes	7/1/2014 7:23 AM
3	Definitely. Until cars can pivot while moving or not induce adrenaline terror, they will remian ultimately lacking mobility.	6/30/2014 4:30 PM
4	Yes	6/30/2014 4:25 PM
5	As a walkwr, I am scared of bicycles crossing my path oblivious to their surroundings (earbuds)	6/30/2014 4:20 PM
6	yes	6/30/2014 3:54 PM
7	Yes	6/30/2014 3:41 PM
8	yes	6/30/2014 3:08 PM
9	Yes!!	6/30/2014 3:01 PM
10	Unlikely	6/30/2014 2:56 PM
11	Yes	6/29/2014 9:41 PM
12	Immediately, for neighbors with little kids and others learning to bike, it would provide a car-free path to bike on. It would also provide, hopefully, a tree-lined path for walkers and runners. In the near future, making a connection to Kendall Square and to the Cambridge side of the PDW path would connect it to Jobs and other bike commuting routes. In the long term, it would need to connect to both sides of the PDW path along the Charles and to the Community Path Extension being built.	6/28/2014 7:40 PM
13	I'm not sure. There already are bike paths along Vassar. This is a different project all together, but improved mobility within campus (that awful parking lot area through under Building 9, etc) might be another useful use of time.	6/26/2014 10:56 AM
14	YES	6/25/2014 10:52 AM
15	perhaps	6/25/2014 10:51 AM
16	sure	6/25/2014 10:37 AM
17	Yes. There are lots of pedestrians in this area who walk in the bike path, or cross it suddenly without looking.	6/25/2014 7:14 AM
18	yes	6/24/2014 11:05 PM
19	Yes, absolutely.	6/24/2014 10:05 PM
20	No	6/24/2014 6:36 PM

21	as long as it doesn't reduce inexpensive (free or metered) auto parking. I bike when I can, but I'm in my 50s and have health issues. I could have got a disability placard, but I look healthy enough (problems are biochemical & nerve damage) I'd get rocks thrown at me (metaphorically) if I used it. I can't afford paid-lot parking, and though I support bike paths, they sometimes take crucial parking (like in the Longwood Medical area).	6/24/2014 5:20 PM
22	yes	6/24/2014 5:08 PM
23	Yes and my friends would too! Some are green line and some of us are red line.	6/24/2014 2:34 PM
24	yes	6/24/2014 11:08 AM
25	Yes	6/24/2014 9:14 AM
26	Yes - with separated foot/bike paths because the bike paths along the sidewalks on Vassar have me constantly looking and expecting to be hit by a bike while on foot. Also, possible east/west fixed-rail shuttle or similar to reduce TechShuttles blocking Vassar on stops	6/24/2014 7:28 AM
27	From the point of view of a bicyclist, maybe, maybe not. It depends on the permitted uses. If bicyclists are permitted, safety for bicyclists might be improved.	6/24/2014 7:13 AM
28	Unlikely - there are already adequate pedestrian and bicycle facilities on Vassar St. But may improve bicycle mobility once the future connections are built.	6/24/2014 1:00 AM
29	Yes.	6/23/2014 11:41 PM
30	Yes! Mobility and safety.	6/23/2014 11:02 PM
31	Absolutely!!!	6/23/2014 12:40 PM
32	yes absolutely, it would help provide connectivity to the charles river and MIT campus	6/23/2014 12:14 PM
33	Yes, greatly	6/23/2014 10:33 AM
34	Absolutely!!!!!	6/23/2014 10:07 AM
35	yes	6/23/2014 7:35 AM
36	No	6/23/2014 4:06 AM
37	No, the bike path directly parrallel on Vassar is very convenient already.	6/23/2014 3:50 AM
38	It would help improve the throughput to the BU bridge, for instance. The path along the river is in terrible shape, so a well-designed bike path would be beneficial.	6/23/2014 3:45 AM
39	Absolutely.	6/23/2014 1:19 AM
40	yes!	6/22/2014 11:40 PM
41	Yes.	6/22/2014 10:46 PM
42	A bit	6/22/2014 10:08 PM
43	No, duplicative of the cycle track along Vassar St.	6/22/2014 9:46 PM
44	Oh yeah	6/20/2014 11:52 AM
45	Yes I would use bike path and pedestrian path.	6/20/2014 11:40 AM
46	Yes	6/20/2014 10:26 AM

47	Better cycling, though it's already pretty good. The Mass Ave intersection is terrible!	6/20/2014 9:27 AM
48	yes very much so	6/20/2014 8:46 AM
49	Yes. Right now, the west end of Vassar Street is a dead end for cyclists. Have you ever seen a single cyclist take the lane on Memorial Drive west bound? No crossing *OR* left turn to Memorial Drive east bound. The sidewalk on Memorial Drive to BU rotary is appalling as well, especially on the bridge over the tracks. Connections to BU bridge are therefore very poor. Better off bailing and heading over Harvard (Mass Ave) Bridge *OR* cycling though Cambridgeport to BU rotary.	6/20/2014 8:14 AM
50	Yes!	6/20/2014 6:31 AM
51	Yes!	6/20/2014 6:31 AM
52	Hells yeah.	6/20/2014 2:36 AM
53	Yes!	6/19/2014 11:31 PM
54	Yes! And safer for all travelers, regardless of their transportation mode.	6/19/2014 9:51 PM
55	Yes.	6/19/2014 9:28 PM
56	YES!	6/19/2014 8:27 PM
57	No, it would not improve my mobility along the section I use, because I already use Vassar Street which is fine.	6/19/2014 8:16 PM
58	Yes	6/19/2014 7:43 PM
59	Absolutely, without a doubt. Much needed!	6/19/2014 7:07 PM
60	Absolutely!	6/19/2014 6:46 PM
61	Yes!	6/19/2014 12:12 PM
62	Yes	6/19/2014 8:01 AM
63	No	6/18/2014 7:28 PM
64	yes	6/18/2014 4:28 PM
65	Yes, if it made crossing Mass Ave. easier.	6/18/2014 1:12 PM
66	absolutely! the connection to MIT from the South (i.e. Allston) would be greatly improved	6/18/2014 9:08 AM
67	Absolutely.	6/17/2014 7:57 PM
68	YES!!	6/17/2014 5:30 PM
69	if there's some way that it wouldn't duplicate the nearly parallel and very close bicycle and walking paths on Vassar St., yes. If multi-use includes some sort of transit, that would be great	6/17/2014 4:17 PM
70	Yes. It would improve access from towns to the north to Cambridge, the Charles and beyond.	6/17/2014 1:59 PM
71	Yes. Would reduce car traffic and provide quicker transportation	6/17/2014 1:07 PM
72	yes and safety.	6/17/2014 6:58 AM
73	Absolutely	6/17/2014 6:00 AM
74	YES!	6/16/2014 10:58 PM

75	Absolutely	6/16/2014 10:44 PM
76	Absolutely. The sidewalk along the river is already in terrible shape and overcrowded, and so an alternative would be much appreciated.	6/16/2014 10:29 PM
77	Yes	6/16/2014 10:02 PM
78	Yes!	6/16/2014 9:36 PM
79	OH YES!	6/16/2014 9:00 PM
80	Yes	6/16/2014 8:29 PM
81	For many. As an avid commuter and strong cyclist I feel able to move through the city without much infrastructure. However, to make the city accessible to the average cyclist, I think this would be very helpful.	6/16/2014 8:13 PM
82	YES!!	6/16/2014 7:22 PM
83	yes	6/16/2014 6:04 PM
84	I'm not sure. But if a solution involves more noise, pollution and traffic in the Cambridgeport neighborhood, i would not favor the proposal.	6/16/2014 5:15 PM
85	Yes definitely.	6/16/2014 5:14 PM
86	Yes - but I hold on to the fantasy of the Urban Ring better utilizing this corridor.	6/16/2014 3:44 PM
87	yes, greatly! it is otherwise a hard area to navigate. With many busy streets and a very busy rotary to cross.	6/16/2014 3:37 PM
88	yes.	6/16/2014 3:36 PM
89	Yes, indeed the Grand Junction Corridor improve mobility in this area to add more path lights during the night time.	6/16/2014 3:26 PM
90	for biking and walking, not rail or car	6/16/2014 3:23 PM
91	maybe	6/16/2014 2:33 PM
92	YES	6/16/2014 12:37 PM
93	YES	6/16/2014 12:14 PM
94	It would greatly improve city connectivity. Many people would use this for commuting, both from Brookline to Kendall and from Cambridge to BU, Fenway, and the Longwood Medical Area. It would also make it much easier for students from Fenway area and BU to interact with MIT students.	6/16/2014 12:10 PM
95	Yes, overall creating an interconnected network of multi-use cities is a wonderful improvement in mobility and increase in amenities in this and surrounding cities/towns.	6/16/2014 11:40 AM
96	Yes, it would provide a means for people on bike and on foot to safely traverse the area.	6/16/2014 11:39 AM
97	Multi-use meaning shared by bikes and pedestrians? Sure, as long as there are clear marking for use.	6/16/2014 11:15 AM
98	YES!	6/16/2014 11:03 AM
99	Perhaps	6/16/2014 10:00 AM
100	YES!	6/16/2014 9:46 AM

101	YES!	6/16/2014 9:38 AM
102	Absolutely	6/16/2014 9:23 AM
103	definitely	6/16/2014 9:18 AM
104	Yes	6/16/2014 9:07 AM
105	Yes, absolutely. A low-stress connection is needed for this corridor in Cambridge.	6/16/2014 9:07 AM
106	Absolutely	6/16/2014 8:43 AM
107	probably, and it would probably cut down on negative interactions with cars and delivery trucks	6/16/2014 8:31 AM
108	YES!	6/16/2014 8:03 AM
109	Yes	6/16/2014 2:53 AM
110	Yes, as a visible first step to (a) completing the larger corridor from Boston to Somerville, and (b) promoting better use of rail corridors for other means of transportation.	6/16/2014 2:20 AM
111	Yes!	6/16/2014 12:27 AM
112	Certainly - there a lots of people using the Mass Ave Bridge then turning west who could use this route instead.	6/16/2014 12:09 AM
113	Yes!	6/15/2014 11:44 PM
114	Yes	6/15/2014 11:29 PM
115	Yes	6/15/2014 11:05 PM
116	Yes	6/15/2014 11:02 PM
117	Oh heck yes	6/15/2014 10:59 PM
118	Definitely!	6/15/2014 10:47 PM
119	Yes	6/15/2014 10:17 PM
120	Yes!	6/15/2014 10:16 PM
121	Yes, improve mobility and improve safety	6/15/2014 9:52 PM
122	Yes	6/15/2014 9:46 PM
123	yes	6/15/2014 9:35 PM
124	Yes!!!!	6/15/2014 9:31 PM
125	yes	6/15/2014 9:30 PM
126	Absolutely	6/15/2014 9:19 PM
127	Yes. More people would be comfortable cycling in that area if there were a path. It might also provide a better route for people in wheelchairs.	6/15/2014 9:11 PM
128	Yes, if it were very bike-friendly I consider adjusting my route.	6/15/2014 9:09 PM
129	Absolutely	6/15/2014 8:58 PM

130	Yes	6/15/2014 8:52 PM
131	Yes, sort of a bus dead zone currently	6/15/2014 8:40 PM
132	Certainly. It would provide an enticing route to and from work for thousands of individuals. For many, the barrier to bicycling and walking to work is the discomfort and lack of safe infrastructure. My father, for example, enjoys bicycling but will not bicycle to work because it is not safe or fun. It is a distinctly unpleasant experience, dodging cars, angry drivers, etc.	6/15/2014 8:40 PM
133	Yes	6/15/2014 8:37 PM
134	Yes	6/15/2014 8:32 PM
135	Yes, I would choose to bike if there were paths available	6/15/2014 8:30 PM
136	Yes, very much!	6/15/2014 8:24 PM
137	Yes.	6/15/2014 8:22 PM
138	Yes	6/15/2014 8:14 PM
139	yes	6/15/2014 8:13 PM
140	Yes, by a lot.	6/15/2014 8:11 PM
141	Yes.	6/15/2014 8:10 PM
142	Yes	6/15/2014 8:09 PM
143	Yes	6/15/2014 8:05 PM
144	YES!	6/15/2014 7:58 PM
145	Yes	6/15/2014 7:44 PM
146	Absolutely	6/15/2014 7:41 PM
147	Yes	6/15/2014 7:38 PM
148	Yes	6/15/2014 7:37 PM
149	Yes	6/15/2014 7:25 PM
150	YES	6/15/2014 7:24 PM
151	Yes!	6/15/2014 7:22 PM
152	Yes	6/15/2014 7:20 PM
153	yes!!!	6/15/2014 7:17 PM
154	Yes	6/15/2014 7:14 PM
155	yes	6/15/2014 7:06 PM
156	Yes	6/15/2014 7:04 PM
157	No	6/15/2014 7:04 PM

158	Yes, especially from the BU Bridge. The rotary in Cambridge is really challenging for pedestrians and cyclists, as is getting from the BU Bridge to Memorial Drive toward Mass Ave. The sidewalk/bike path is not wide enough for cyclists until you reach the BU boathouse.	6/15/2014 7:00 PM
159	Yes	6/15/2014 6:59 PM
160	without question	6/15/2014 6:45 PM
161	No we need transit here! We already have bike and ped accommodations on vassar and other parallels.	6/14/2014 7:05 PM
162	YES!!!	6/14/2014 4:18 PM
163	Yes	6/14/2014 1:24 PM
164	Yes.	6/14/2014 10:51 AM
165	Yes. The path along the river is not in good condition for biking and is full of pedestrians.	6/14/2014 10:17 AM
166	Yes	6/14/2014 10:03 AM
167	If the path could continue over the railroad bridge to Boston, it would be a dramatic improvement for bike mobility. Cycling through the BU Bridge Rotary is unsafe, and otherwise very slow going through the crosswalks.	6/14/2014 8:42 AM
168	Yes!	6/14/2014 8:21 AM
169	Yes, it would.	6/13/2014 9:49 PM
170	Only if it doesn't preclude future DMU service between Allston and Cambridge.	6/13/2014 2:58 PM
171	I absolutely believe that the ability to cross the Charles River with an off-road path would improve mobility drastically. Additionally, another alternative route to get to Kendall Square from the western part of MIT will be incredible.	6/13/2014 1:29 PM

Q3 For what kinds of trips?

Answered: 160 Skipped: 13

#	Responses	Date
1	out and about trips	7/17/2014 9:00 PM
2	Any and all	7/1/2014 7:23 AM
3	Commuting, recreational	6/30/2014 4:30 PM
4	Going to BU area or from Cambridgeport to East Cambridge	6/30/2014 4:25 PM
5	I use the streets to walk to work (Central Sq.), walk my dog, shop fro groceries, drive to Milton and on and on	6/30/2014 4:20 PM
6	short trips in boston and cambridge areaa	6/30/2014 3:54 PM
7	Commutign from work to home	6/30/2014 3:41 PM
8	Cyclists would have a dedicated path, skipping some crossings	6/30/2014 3:08 PM
9	East Cambridge to BU Bridge, but that is rare for me. Most of my trips end at Central or MIT.	6/30/2014 2:56 PM
10	Cambridge <-> Boston	6/29/2014 9:41 PM
11	Commuting, both work and school. Pleasure trips for neighboring residents. If the path were lit at night, it would provide a	6/28/2014 7:40 PM
12	Biking	6/26/2014 10:56 AM
13	Bike & Pedestrian Commuting	6/25/2014 10:52 AM
14	bicycle, rail	6/25/2014 10:51 AM
15	all kinds	6/25/2014 10:37 AM
16	I commute this way every day.	6/25/2014 7:14 AM
17	commuting to and from MIT area	6/24/2014 11:05 PM
18	Cycling and walking.	6/24/2014 10:05 PM
19	whole foods run, commute to work	6/24/2014 5:08 PM
20	Any kind that are more direct and get us off the B train- especially during rain storm, big Bu or Fenway event must walk home because can't get on the trains because they are too crowded. Thanks Bu expansion and the expansion of Fenway park.	6/24/2014 2:34 PM
21	trips that extend beyond red line	6/24/2014 11:08 AM
22	Commuting to the gym and work.	6/24/2014 9:14 AM
23	east/west campus connectivity with a convenience stop at Mass ave for student center	6/24/2014 7:28 AM
24	What kinds are there?	6/24/2014 7:13 AM

25	Commuting. The railway corridor is very unattractive and probably wouldn't appeal to people on leisure trips.	6/24/2014 1:00 AM
26	Commuting and recreation.	6/23/2014 11:41 PM
27	Commuting and re reTion	6/23/2014 11:02 PM
28	Crossing the BU bridge. Anything from BU to East Cambridge.	6/23/2014 12:40 PM
29	bikeways, dog walks amd pedestrian trails with proper street lighting and maybe marked crossings at fort washington park and pacific street would be great to enhance access to MIT and then extend to charles river.	6/23/2014 12:14 PM
30	excersive and recreation, connection to BU	6/23/2014 10:33 AM
31	Getting across the river; to MIT; to Cambrigdeport.	6/23/2014 10:07 AM
32	biking. I don't think it would help walking trips at all.	6/23/2014 7:35 AM
33	It would not be essential. I travel to MIT from Cambridge port in this area	6/23/2014 3:50 AM
34	Going to the grocery store, visits between friends, going out on the town, jogging, or just walking or cycling around town.	6/23/2014 1:19 AM
35	leisure and commute	6/22/2014 11:40 PM
36	Biking, walking.	6/22/2014 10:46 PM
37	Commute to campus and local leisure activities, such as going to a restaurant.	6/22/2014 10:08 PM
38	Bicycling Kendall to BU area	6/20/2014 11:52 AM
39	travel to work shopping and recreation from my home near Central Square	6/20/2014 11:40 AM
40	Walking and biking.	6/20/2014 10:26 AM
41	Cycling	6/20/2014 9:27 AM
42	commuting, recreation and errands	6/20/2014 8:46 AM
43	Everything but work commute.	6/20/2014 8:14 AM
44	All kinds	6/20/2014 6:31 AM
45	All kinds	6/20/2014 6:31 AM
46	Bicycle.	6/20/2014 2:36 AM
47	Commuting mainly, pleasure.	6/19/2014 11:31 PM
48	To and from work, visiting other neighborhoods in the city.	6/19/2014 9:51 PM
49	For me, biking to/from work.	6/19/2014 9:28 PM
50	many	6/19/2014 8:27 PM
51	I make commute trips from home to my office at MIT.	6/19/2014 8:16 PM
52	short trips, excercise	6/19/2014 7:43 PM
53	There is no public transport going in this direction today, all traffic is going thru a congested Memorial Drive, forcing people into cars.	6/19/2014 7:07 PM

54	Shopping, commuting, fun	6/19/2014 6:46 PM
55	We live in East Cambridge, and would use this pathway for short and long trips for shopping, kids' lessons, to visit friends, to go to events on the river (festivals, etc.)	6/19/2014 12:12 PM
56	Bike, walk	6/19/2014 8:01 AM
57	bike trips using the BU Bridge, trips to Kendall square.	6/18/2014 4:28 PM
58	All, especially daily commuting.	6/18/2014 1:12 PM
59	every trip could be a bicycle/walk trip with the right facilities.	6/18/2014 9:08 AM
60	Walking and biking	6/17/2014 7:57 PM
61	primarily for bicycle trips, it would allow shorter, more direct trips with much less stress and danger and delay due to vehicle traffic	6/17/2014 5:30 PM
62	its like allston, brighton, and brookline are so far away but they're not! its just that there aren't good & safe transit or bicycle connections	6/17/2014 4:17 PM
63	Commuting to the LMA.	6/17/2014 1:59 PM
64	Visiting MIT locations, the river and recreational trips	6/17/2014 1:07 PM
65	errands, work.	6/17/2014 6:58 AM
66	Trips to shopping areas on either ends, as well as through trips from the Somerville area to the BU area of Boston.	6/17/2014 6:00 AM
67	All? I mainly bike everywhere.	6/16/2014 10:58 PM
68	Grocery trips, commuting to work, cross town to get to Boston or Somerville etc	6/16/2014 10:44 PM
69	Anything, really. Hubway from MIT to BU, I know a lot of starrtup folk who live in Allston and commute to Kendall.	6/16/2014 10:29 PM
70	Pedestrians and cyclists	6/16/2014 10:02 PM
71	Bike trips.	6/16/2014 9:36 PM
72	Allston to Central/Kendall	6/16/2014 9:00 PM
73	Commuting and interoffice walking.	6/16/2014 8:29 PM
74	Commutes, neighborhood jaunts, families with kids, students getting to class.	6/16/2014 8:13 PM
75	bicycle, walking	6/16/2014 7:22 PM
76	Home-work and Home - leisure trips	6/16/2014 6:04 PM
77	Accessing Central Sq and Kendall Sq.	6/16/2014 5:15 PM
78	Getting from Union to Allston or Kendall for farmers markets, shopping, entertainment, bringing kids to art classes and to somerville festivals (fluff festival, beardfest, etc), visiting friends in Somerville	6/16/2014 5:14 PM
79	Bike trips from Somerville and Wellington-Harrington to MIT and the BU Bridge. When I was an MIT grad student living in Somerville, I often wished for it.	6/16/2014 3:44 PM
80	trips from cambridge to boston, trips to the minuteman trail from the galleria mall area/kendall MIT. Trips westward on the greenline extension route.	6/16/2014 3:37 PM

81	all kinds.	6/16/2014 3:36 PM
82	The kinds of trips going around the Boston & Cambridge area example adding a Commuter Rail Stop in the near future.	6/16/2014 3:26 PM
83	Bike, foot	6/16/2014 12:37 PM
84	Commuting, recreation, errands, etc. All kinds.	6/16/2014 12:14 PM
85	Commuting, social, recreational connection to Somerville Community Bike Path and the Esplanade.	6/16/2014 12:10 PM
86	Both commuting and recreational.	6/16/2014 11:40 AM
87	Cycling to/from work and school as well as recreational trips.	6/16/2014 11:39 AM
88	Travel east and west. I don't have anything to stop for on Vassar.	6/16/2014 11:15 AM
89	Commuting to work & for pleasure.	6/16/2014 11:03 AM
90	leisure / connection to the esplanade	6/16/2014 10:00 AM
91	commuting, shopping, recreation, and to take new riders out into the city	6/16/2014 9:46 AM
92	Bike, walk	6/16/2014 9:38 AM
93	Getting from Allston to Central Square or Kendall without having to take god-awful Cambridge Street	6/16/2014 9:23 AM
94	moving bikes to a multi-use path is safer for the cyclists and reduces congestion for motor traffic.	6/16/2014 9:18 AM
95	Ride from Cambridgeport to Boston. I don't have a car.	6/16/2014 9:07 AM
96	Bike, walk, T access	6/16/2014 9:07 AM
97	Allston - East Cambridge, East Somerville, Kendall, Union Sq.	6/16/2014 8:43 AM
98	commuting, etc	6/16/2014 8:31 AM
99	Bicycle	6/16/2014 8:03 AM
100	Any kind of cycling walking or running - commuting, recreational, exercising.	6/16/2014 2:53 AM
101	Quickly traversing campus on bicycle without crossing lots of driveways and roads. Eventually making it easier to get into Boston / Brighton / Brookline which are poorly served by the BU Bridge alone.	6/16/2014 2:20 AM
102	Business commuting, recreation, leisure, and shopping. Especially bicycle commute connectivity.	6/16/2014 12:27 AM
103	Somerville to Longwood	6/16/2014 12:09 AM
104	Cycling, walking, linking different modes of transportation	6/15/2014 11:44 PM
105	Commute	6/15/2014 11:29 PM
106	Faster, safer bike trips to much of Kendall Square.	6/15/2014 11:05 PM
107	All	6/15/2014 11:02 PM
108	Commuting through, meeting people in the area at local businesses, and maybe even working in the area in the future	6/15/2014 10:59 PM
109	All of the trips!	6/15/2014 10:47 PM

110	Short and long trips, commuting, errands, social trips	6/15/2014 10:17 PM
111	Biking and walking. And using the T, then Hubway.	6/15/2014 10:16 PM
112	commuting as well as weekend fun	6/15/2014 9:52 PM
113	Commute and pleasure	6/15/2014 9:46 PM
114	commuting: Kendell to Longwood	6/15/2014 9:35 PM
115	Biking and running. Commuting, errands and excercise.	6/15/2014 9:31 PM
116	going to school, meeting up with friends, running errands	6/15/2014 9:30 PM
117	I'm coming from Somerville so a safe route towards and across the Charles would be a huge improvement.	6/15/2014 9:19 PM
118	Anything from commuting to recreation.	6/15/2014 9:11 PM
119	Daily work commute	6/15/2014 9:09 PM
120	Walking and cycling	6/15/2014 8:58 PM
121	River to MIT and Kendall Square	6/15/2014 8:52 PM
122	Shopping	6/15/2014 8:40 PM
123	For trips to and from work in Kendall Square, for casual weekend outings to Flour, Brookline Lunch, etc. It would also provide important route of Transit from Allston/Brighton/Kenmore towards Central, Kendall, East Cambridge, and the soon-to-be-developed East Somerville.	6/15/2014 8:40 PM
124	Bike for me, auto and train for others	6/15/2014 8:37 PM
125	Recreational and to and from work.	6/15/2014 8:32 PM
126	mostly recreation but some errands as well	6/15/2014 8:30 PM
127	Commuting to work, exercise and general travel	6/15/2014 8:24 PM
128	Commutes	6/15/2014 8:22 PM
129	Local bike trips	6/15/2014 8:14 PM
130	all trips. commutes, recreation	6/15/2014 8:13 PM
131	Work and play	6/15/2014 8:11 PM
132	Trips between Brookline / Allston / Brighton to Cambridge i.e. Central and Kendal Squares.	6/15/2014 8:10 PM
133	Commute or traveling to Allston	6/15/2014 8:09 PM
134	Work and leisure	6/15/2014 8:05 PM
135	Errands/Recreation	6/15/2014 7:58 PM
136	Commuter and pleasure rides	6/15/2014 7:44 PM
137	Commuting, recreation, general transportation	6/15/2014 7:41 PM
138	Boston to Cambridge, commuting to work, going to yoga, easy access between the sides of the river	6/15/2014 7:38 PM

139	Pleasure riding and work commute	6/15/2014 7:37 PM
140	Commuting, travelling through the city	6/15/2014 7:25 PM
141	work, grocery, commuting	6/15/2014 7:24 PM
142	Between MIT and Longwood Medical campuses, general commutes to/from home and work.	6/15/2014 7:22 PM
143	practical use, getting into parts of Boston from Somerville	6/15/2014 7:20 PM
144	commuting, errand running, enjoyment of life not in a car...	6/15/2014 7:17 PM
145	Trips passing through the area would be able to avoid Mass Ave which is chaotic all of the time.	6/15/2014 7:14 PM
146	commute to work.	6/15/2014 7:06 PM
147	Recreation	6/15/2014 7:04 PM
148	Biking and walking. Easier access between Allston/BU and Central/Kendall/East Cambridge	6/15/2014 7:00 PM
149	Work. Shopping. Entertainment	6/15/2014 6:59 PM
150	recreational cycling (connecting mid-Cambridge and Kendall to the Esplanade); commuter cycling along axes from N. Station to North Point to Kendall to Lower Allston to the LMA.	6/15/2014 6:45 PM
151	Transit	6/14/2014 7:05 PM
152	Work, errands, leisure	6/14/2014 4:18 PM
153	Regional bike transportation should be prioritized foremost in design.	6/14/2014 1:24 PM
154	Recreational, commuting.	6/14/2014 10:51 AM
155	It would provide a safe way to get to other parts of the city and suburbs and improve commuting routes for bicyclist	6/14/2014 10:03 AM
156	commuting, general travel	6/14/2014 8:42 AM
157	Bike, ped, ADA, skating, strollers, etc. Commuting, recreation.	6/14/2014 8:21 AM
158	From my home in East Cambridge to Kendall square. In the future, I would imagine also to reach the Somerville community path.	6/13/2014 9:49 PM
159	I guess for bikers and lazy joggers. who can't make it down a little further on the river to get up onto the bu bridge.	6/13/2014 2:58 PM
160	Commuting between Boston to Cambridge for work and academics. Recreation close to the river will be much easier for people of all ages and abilities.	6/13/2014 1:29 PM

Q4 What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Answered: 160 Skipped: 13

#	Responses	Date
1	wide path so faster cyclists can easily pass slower cyclists	7/17/2014 9:00 PM
2	Wide enough marked clearly with wayfinding at junctions signs reminding rules of road	7/1/2014 7:23 AM
3	Keeping the GJP a contiguous path is critical fro the success of the project or to replace Vassar, alowing for greater development space for MIT	6/30/2014 4:30 PM
4	Mass Ave crossing, train safety and noise	6/30/2014 4:25 PM
5	If they can find a way to silence the warning horn I would be happy. Also, for the traffic impeded by the train, an underground crossing maybe?	6/30/2014 4:20 PM
6	width, dedicated routes for dofferent modes avoiding intersections (tunnels, bridges)	6/30/2014 3:54 PM
7	It would be amazing if the path coudl connect Allston-Cambridge-Somerville!!!	6/30/2014 3:41 PM
8	Accessibility for all	6/30/2014 3:01 PM
9	Make it safe and inviting enough for even causal bikers	6/29/2014 9:41 PM
10	Connections for Pedestrians and cyclists noted in the previous questions. Allow for future mass transit (BRT or light rail) connecting BU, MIT, Kendall Square, Somerville via the Green Line near BU and the GLX, hopefully at a future station near the Brickbottom/Twin Cities Plaza Area.	6/28/2014 7:40 PM
11	Hubway stations Safe (non-skid) surfacing NYC Highline type greenspaces; artspaces , gardens, sculpture, passive recreation, etc.	6/25/2014 10:52 AM
12	Provision for rail connection from Lechmere/Kendall to Allston/Longwood. This is where the Urban Ring belongs.	6/25/2014 10:51 AM
13	that bikers and peds don't get hit by trains, and that there is enough space for both.	6/25/2014 10:37 AM
14	Easy access to/from cross roads. Obvious separation between bikers and pedestrians.	6/25/2014 7:14 AM
15	link to Dudley bike path, easy access to Mass Ave	6/24/2014 11:05 PM
16	Protection from cars and smart intersections with major roadways such as what is detailed here: http://www.protectedintersection.com/	6/24/2014 10:05 PM
17	Make it safer and more convenient to walk and cycle in nearby streets. Not along a rail line between the backs of industrial buildings.	6/24/2014 6:36 PM
18	A lot of protected green for the animals. A lot of wildlife will be impacted. I have had conversations with neighbors and most agree it is one of the last sacred places for native species that linger in the Kendall area. Many birds rely on this last patch of low use corridor. There are nests and natural sources of food. If we could have the pathway and add additional private vegetation it is a win win. It isn't all about us.	6/24/2014 5:08 PM

19	Have multiple points of entry for bicycles and pedestrians. Connect green line residents with red line residents. I would be nice if Bu shared the bus rides with their neighbors since they take all the room on the (T) as well as the parking. Don't invite more cars or buildings!	6/24/2014 2:34 PM
20	MIT's participation	6/24/2014 11:08 AM
21	safety from the trains, homes for the hobos, preserve the rabbit habitat somehow, get rid of the ragweed, clear lateral connections, motion detecting night lighting. One lane for bikes and one for pedestrians.	6/24/2014 9:14 AM
22	sensitivity to students living on north side of Simmons hall - there is enough Cambridge/industrial noise there already	6/24/2014 7:28 AM
23	Width, permitted usages, paving (or not), markings, access.	6/24/2014 7:13 AM
24	Connectivity to other paths - it is only going to be useful if the future connections are built. Ideally this would be all done straight away to avoid constructing a half-baked, fragmented network. Otherwise it is just a pointless duplication of Vassar Street. Why not spend that money on the Charles River bike path? It is in an atrocious, overcrowded condition outside MIT and has more potential for commuting trips to MIT and downtown Boston. This is because, unlike the Grand Junction corridor, it is already connected to something resembling a regional bicycle network.	6/24/2014 1:00 AM
25	Connections to Allston amd the Minuteman/Smvl. Comm. Path.	6/23/2014 11:41 PM
26	Keep it maintained, well lit, clear signage for walkers and bikers, separate pathways for walkers and bikers; post rules for bikers regarding speed, passing, rules of road, etc.	6/23/2014 11:02 PM
27	Path must be continuous, and afford more utility than a similar trip along parallel paths. Path should connect straight across at ALL road crossings. Should remain on one side of the tracks, not skip back and forth.	6/23/2014 12:40 PM
28	safety, corridor enhancement, greenway creation, sound mitigation, access and connectivity.	6/23/2014 12:14 PM
29	landscaping, safety along tracks, lighting	6/23/2014 10:33 AM
30	Continuation up into East Cambridge past Kendall Square.	6/23/2014 10:07 AM
31	safe crossings at major arterials (Mass Ave, Main St) and interaction between modes.	6/23/2014 7:35 AM
32	A reason to use it rather than streets	6/23/2014 4:06 AM
33	There are a number of homeless people living near Fort Washington Park. The project should take into consideration the needs of these people and the reasons why they have elected to use this area. Safety is another important issue on the corridor at night.	6/23/2014 3:50 AM
34	Do not make it a mixed use path. This creates problems for both bicycles and pedestrians, and each should have their own space on the path.	6/23/2014 3:45 AM
35	It should be crossable, it shouldn't be too broken at intersections, and it should be visible and safe at night (well-lit). It should have bike and pedestrian paths that can reasonably accommodate bikes, joggers, people walking dogs, razor scooters, and skateboards. It should give plenty of warning about coming trains and the trains should slow down through the area, but I think it is fine if the pedestrian space overlaps the train tracks in many places. I have seen this done successfully many times. Currently the train track serves as a major barrier between the neighborhoods on either side.	6/23/2014 1:19 AM
36	safe connections to other bike routes, improved bike routes in the vicinity	6/22/2014 11:40 PM
37	Accessibility for users of all ability levels.	6/22/2014 10:46 PM
38	Safety with train, bike path that has ramp access to places it connects.	6/22/2014 10:08 PM

39	Reconsider whether or not a multi-use path is actually necessary, instead of other improvements to the public realm (i.e. green space, outdoor seating, public gardens, etc.)	6/22/2014 9:46 PM
40	turning the RR bridge into a path	6/20/2014 11:52 AM
41	Complete (continuous) bike path should be highest priority. This is unprecedented opportunity to connect urban bike paths with Minuteman Path and Beyond. Biking on BU bridge is currently very dangerous. Use of the old rail bridge for cycling would be fantastic.	6/20/2014 11:40 AM
42	Intersections with roads, continuity across at segments.	6/20/2014 10:26 AM
43	Mass Ave intersection is terrible!	6/20/2014 9:27 AM
44	not special comes to mind	6/20/2014 8:46 AM
45	Vassar Street to Grand Junction/under BU bridge connection at the athletic fields. Connections on the Boston Side to Colleges of the Fenway / Longwood Medical Area. Boat under a Train and Bike under a Car and Bike under a Plane. Yeah. Might be a transportation singularity.	6/20/2014 8:14 AM
46	Safe intersections.	6/20/2014 6:31 AM
47	Safe intersections.	6/20/2014 6:31 AM
48	Difficult and dangerous intersections for cyclers, like at Brookline St. & Memorial Drive.	6/20/2014 2:36 AM
49	Bridge connection to boston, connection to somerville community path.	6/19/2014 11:31 PM
50	Connection/routes	6/19/2014 9:51 PM
51	crossings, and specifically the Mass Ave crossing.	6/19/2014 9:28 PM
52	make it pretty like the hyline in NYC	6/19/2014 8:27 PM
53	The crossing of Mass Ave will be key. Crossing Mass Ave is really the only problem with the Vassar Street cycle track; I wish we would just fix that intersection instead of building a whole new parallel path.	6/19/2014 8:16 PM
54	land taking	6/19/2014 7:43 PM
55	Light rail with frequent stops, good and safe bike and walk paths.	6/19/2014 7:07 PM
56	Clearance for safety	6/19/2014 6:46 PM
57	Separate bike pathways Safe crossings - for kids and adults. I regularly commute to work using the Fresh Pond bike routes. Many cars do not stop at the stoplight when it's red, and I have never seen this enforced. This is not dangerous for me, as I don't expect them to stop, but is dangerous for kids who might reasonably expect cars to stop	6/19/2014 12:12 PM
58	Accessibility, safety	6/19/2014 8:01 AM
59	Railways are scarce. Use for public transport instead of a pathway.	6/18/2014 7:28 PM
60	wide enough to accommodate many modes, comfortable with shade and greenery. easy access points	6/18/2014 4:28 PM
61	Crossing major (multilane) streets	6/18/2014 1:12 PM
62	determining whether the other portions of the path will be viable, though even a partial construction is better than nothing.	6/18/2014 9:08 AM
63	I'm not sure	6/17/2014 7:57 PM

64	Bare minimum is to connect all the way to Charles River path and to Community Path in Somerville. Even better is to continue over Charles River and connect to a "People's Pike" proposed new path in Allston	6/17/2014 5:30 PM
65	convenience. safety.	6/17/2014 4:17 PM
66	Good connectivity to other paths at its beginning and end	6/17/2014 1:59 PM
67	How wide the path should be. Ensuring the path is continuous and handles issues like street crossings.	6/17/2014 1:07 PM
68	well lit, pavement maintenance, marked lanes so bikes and people don't collide	6/17/2014 6:58 AM
69	Interconnection with the existing DCR bikeway and also the proposed green line extension	6/17/2014 6:00 AM
70	Ensuring there is adequate space for all users and areas are well designed. i.e. provide an attractive and sensible area for pedestrians so they don't take over the cycling areas and ditto for cyclists.	6/16/2014 10:58 PM
71	Easy to get on and off (access) and we'll maintained. Clearly marked sections for cycling and pedestrian traffic.	6/16/2014 10:44 PM
72	Enough space, and bike signals would be amazing.	6/16/2014 10:29 PM
73	Easy connections and clear signage at crossings with cars	6/16/2014 10:02 PM
74	Not sure.	6/16/2014 9:36 PM
75	Adequate space for multi use	6/16/2014 9:00 PM
76	It is important that mass transit not be sacrificed for a multi-use path. Double tracked rail service or the Urban Ring is much more important than the path.	6/16/2014 8:29 PM
77	City relationship	6/16/2014 8:13 PM
78	off-street connection to comm ave and the emerald necklace paths to the south (through brookline) and to the somerville community path.	6/16/2014 7:22 PM
79	Improvement of bike area in Cambridge most important, safer option to use Mass ave or alternative route from Harvard Bridge to Central square and Harvard square. Mass ave preferably should have a separate bike lane. just like the one in progress on western ave	6/16/2014 6:04 PM
80	Noise, pollution and traffic controls in place so that the residential neighborhood of lower Cambridgeport is not adversely affected.	6/16/2014 5:15 PM
81	Educating drivers of cars (and trucks) about how much space bikers need, and installing protected bike lanes (like the one on Vassar St) as much as possible.	6/16/2014 5:14 PM
82	Regional linkages	6/16/2014 3:44 PM
83	safety, make it multifunction but have pedestrians walk either separated from bikes or in the opposite direction from the flow of bikes so they are safe.	6/16/2014 3:37 PM
84	Coexist well with existing railbeds and sidings.	6/16/2014 3:36 PM
85	The key factors that I needed to be addressed for the Grand Junction Path to be successful to more community around the area.	6/16/2014 3:26 PM
86	how it integrates with surrounding neighborhood and impact on noise levels and congestion	6/16/2014 3:23 PM
87	Who is conducting this survey? I feel like every year or two someone stops me on my bike on Vassar street and asks me to tell them about my experiences biking in the area. My broken record priority is getting that one treacherous intersection at Vassar and Mass Ave safetied-up for bikers.	6/16/2014 2:33 PM

88	Cycle track so bikes are separate from cars with no danger of being "doored"	6/16/2014 12:37 PM
89	Five different organizations own land parcels in this project; it is critical that they form a committee to address and develop a cohesive plan and initiate its design and construction in tandem. Also, the BU bridge crossing is BIG IF. A back-up plan needs to be evaluated, perhaps taking space/making improvements to the currently used bridge in addition to plans for the inactive underpass bridge. This plan should have connection to the I-90 straightening as well, to ensure network connectivity in the future.	6/16/2014 12:10 PM
90	Good connectivity with other trails. Grand Junction is not as critical as, say, the GLX path because there are already good facilities on Vassar Street. However, intersections are still tricky and this path should feed into the wider network of paths.	6/16/2014 11:40 AM
91	How well it connects with existing infrastructure.	6/16/2014 11:39 AM
92	Separating the bike travel lane and from the sidewalk. Make it all one level, not up and down the curb.	6/16/2014 11:15 AM
93	safety / connections to the trail from esplanade, kendall, and surrounding streets	6/16/2014 10:00 AM
94	cross the charles river to connect to the Dudley White path. Safe cosigns at streets/RR, and have it be wide enough for two-way all users.	6/16/2014 9:46 AM
95	Safe I ntersections with streets.	6/16/2014 9:38 AM
96	Connecting it to the Mass Pike straightening project/Allston	6/16/2014 9:23 AM
97	dedicated cycle tracks	6/16/2014 9:18 AM
98	Many access points to get on and off where you choose.	6/16/2014 9:07 AM
99	Continuity, accessibility	6/16/2014 9:07 AM
100	Paving, Track Removal, crossing lights and lane considerations	6/16/2014 8:43 AM
101	Points where the path intersects with traffic again and peds would need to be carefully marked as crossings and/or have traffic lights.	6/16/2014 8:31 AM
102	Physically separated bike lane from pedestrians and cars. Clear signs and road markings to cars know bikes will be crossing (eg on Mass Ave). Smooth connection to other cycle networks (eg Somerville path, along Memorial drive, along storrow drive). If the cyclist has to get off the bike, walk over a bridge or cross a busy scary intersection as a pedestrian, this is not ideal.	6/16/2014 8:03 AM
103	Keep it lit at night, keep it cleared in the winter, keep the paving in good shape so cyclists don't need a GD mountain bike to use it, lots of entrances and exits (better yet no fences period)	6/16/2014 2:53 AM
104	MIT needs to use its leverage to get the connecting portions completed. Push BU to get behind the Boston side of it. Get Cambridge and Somerville to work together.	6/16/2014 2:20 AM
105	Carefully design the intersections with Mass Ave, Gore Street, and other at-grade street intersections using design elements such as bicycle signals, extensive signage to alert motorists, and surface treatments like pavers in the crossing to improve its visibility to motorists. I'm much more worried about conflicts with motorists and truckers than I am about the occasional freight trains on the Grand Junction rail line.	6/16/2014 12:27 AM
106	How it could be a practical commuting utility rather than simply a pleasurable pathway	6/15/2014 11:44 PM
107	Snow removal, mass ave crossing, river connection. Maybe making it green corridor ala NYC rail track next to Hudson.	6/15/2014 11:29 PM
108	Ease of getting on/off. Interactions with road traffic.	6/15/2014 11:05 PM
109	Connections to Boston and Somerville	6/15/2014 11:02 PM
110	Safer paths, better traffic flow, smoother roads, CYCLE TRACK	6/15/2014 10:59 PM

111	It needs to be easy to enter at different points.	6/15/2014 10:17 PM
112	Width: wide enough for bikes to pass rollerbladers and giant strollers, in both directions. Traffic signals at intersections. Clearing it in the winter.	6/15/2014 10:16 PM
113	separation from traffic, continuity with existing paths	6/15/2014 9:52 PM
114	Markings and instructions for each use type	6/15/2014 9:46 PM
115	build it and it will be used!	6/15/2014 9:35 PM
116	Road crossings. ESP mass ave and memorial drive Traffic separation. Avoid dooring or getting thrown under a bus	6/15/2014 9:31 PM
117	safety	6/15/2014 9:30 PM
118	It just needs to be wide enough to safely accommodate bikers, joggers, fast walkers, and slow walkers.	6/15/2014 9:19 PM
119	Wheelchair accessibility, longevity of materials, signage	6/15/2014 9:11 PM
120	Safe access all the way to the BU Bridge, truly bike friendly path (ideally separate from cars and buffered from exhaust by plants)	6/15/2014 9:09 PM
121	Clearly marked routes for pedestrians and cyclists.	6/15/2014 8:58 PM
122	Access from the Charles River bikepaths Access from the BU Bridge	6/15/2014 8:52 PM
123	Connected to other transport options- bus, train, road	6/15/2014 8:40 PM
124	It has to be complete. There can't be any major breaks in the path, or it won't be the thruway that it needs to be. It also has to be well-lit and filled with trees, plants, and public art. It also needs to be built NOW.	6/15/2014 8:40 PM
125	Well maintained pavement, good lighting for night riding, and a clean surface	6/15/2014 8:37 PM
126	A dividing line down the middle and plenty of signs saying, "All Users Keep Right".	6/15/2014 8:32 PM
127	The connections to it must be well marked and generally safe (bike lanes leading up to it, etc). It would also be great if the path had the right of way at crossing (flashing lights, etc)	6/15/2014 8:30 PM
128	Unknown? A path?	6/15/2014 8:24 PM
129	It needs to be built in its entirety (not just small pieces)	6/15/2014 8:22 PM
130	Some way to minimize usage conflicts btw recreational users (slower) & transportation users (faster).	6/15/2014 8:14 PM
131	property rights, access paths of hazardous material travel, light-rail options- 1 or 2	6/15/2014 8:13 PM
132	Connections to other bicycle paths with clear sinage.	6/15/2014 8:11 PM
133	extend to Charles River or integrate access with BU Bridge.	6/15/2014 8:10 PM
134	Easy connection to streets when getting on and off. Plowed and maintained.	6/15/2014 8:09 PM
135	Smooth roads, well painted lanes, no car interference riding	6/15/2014 8:05 PM
136	Path surface, safety from cars	6/15/2014 7:44 PM
137	Safe and isolated from traffic	6/15/2014 7:41 PM
138	Easy access to minuteman bike path	6/15/2014 7:38 PM

139	Safety for cyclists and walkers. If possible, separate lanes.	6/15/2014 7:37 PM
140	bike path separate from cars and from walking area.	6/15/2014 7:25 PM
141	safe, separated from car traffic	6/15/2014 7:24 PM
142	Connection to greater network of paths / cycle-routes.	6/15/2014 7:22 PM
143	transitions between the path and the sidewalks/streets for cyclists where applicable must be considered w/o multi phase crossings.	6/15/2014 7:17 PM
144	Creating a barrier between bikes and larger vehicles and avoiding putting bike lanes to the right of right turning lanes.	6/15/2014 7:14 PM
145	Safe crossings with motor vehicles	6/15/2014 7:04 PM
146	It needs to fully connect to Allston and to Charlestown. It can't just be another Vassar st.	6/15/2014 7:04 PM
147	Safe, easy connection from BU Bridge to Grand Junction area in Cambridge.	6/15/2014 7:00 PM
148	Connect to Olmsted bikeways to JP & Brookline. Also Davis Sq	6/15/2014 6:59 PM
149	Crossings at busy intersections (Cambridge Street, Main Street, Broadway); connections to the Community Path in Somerville, to the Esplanade path system, and across Storrow Drive and the abandoned rail yard into Lower Allston.	6/15/2014 6:45 PM
150	We need transit on this corridor. Must accommodate a future urban ring connection.	6/14/2014 7:05 PM
151	Connection with community path on one end and river path on the other	6/14/2014 4:18 PM
152	1) Connecting it to other paths to create a real off-street transportation network throughout Boston, Cambridge & Somerville, 2) well-designed, safe, signal-protected crossings, especially at Mass Ave, 3) separation between bike and pedestrian traffic.	6/14/2014 1:24 PM
153	A surface area suitable for inline skating.	6/14/2014 10:51 AM
154	Wide, smooth pavement, clearly marked entrances and exits	6/14/2014 10:17 AM
155	Protected bike lane, designing safe intersections for bicyclists, so they can take safe left turns	6/14/2014 10:03 AM
156	accommodating both rail and a multi-use path somehow, and safely.	6/14/2014 8:42 AM
157	Connections with Community Path extension and Allston.	6/14/2014 8:21 AM
158	Does it connect effectively to the Somerville community path or will people just find more practical to use Medford St?	6/13/2014 9:49 PM
159	fitting it in alongside rail and transit, which must take priority	6/13/2014 2:58 PM
160	Getting over the Charles River is essential. Having signs and interesting features that allow people to realize all the amazing places they can discover along this path will make it very successful.	6/13/2014 1:29 PM

Q5 What should its relationship be to Vassar Street?

Answered: 134 Skipped: 39

#	Responses	Date
1	Not sure	7/1/2014 7:23 AM
2	I would like to see GJP used in conjuction with Vassar st	6/30/2014 4:30 PM
3	Good?	6/30/2014 4:25 PM
4	SInce it runs along the street? I am not sure unless you dig a tunnel	6/30/2014 4:20 PM
5	part of route	6/30/2014 3:54 PM
6	The path would be of partivular interests to MIT students living in Cambridgeport (north of tracks and west of Mass ave) who work/stufy (east of Mass ave and south of tracks) so access to MIT students is important	6/30/2014 3:08 PM
7	Vassar: local : : GJ : express	6/30/2014 2:56 PM
8	deicated/separated	6/29/2014 9:41 PM
9	As a Multi-use path, it should be, during commuting hours, the Bicycle Super Highway/neighborhood bypass to Vassar Street's local access neighborhood street and cycletrack. During non commuting times, it would be a neighborhood greenway.	6/28/2014 7:40 PM
10	Visible, but separate and landscaped enough to make it desirable. The greenway in East Boston could be a good example.	6/26/2014 10:56 AM
11	?? don't understand question.	6/25/2014 10:52 AM
12	Bikes on existing Vassar Street cycle track.	6/25/2014 10:51 AM
13	cordial	6/25/2014 10:37 AM
14	Run parallel to it.	6/25/2014 7:14 AM
15	I see Vassar as a more local option, Grand Junction as more of a through route.	6/24/2014 11:05 PM
16	Please remove the Vassar Street cycle tracks, and replace them with on-street bike lanes. The cycle tracks are dangerous. Pedestrians walk and stand on them. And I don't blame them, because the tracks look like, and are, sidewalks. They increase the likelihood of right-hook collisions with cars turning into driveways, because nobody is expecting fast-moving cyclists on the sidewalk. That's why for decades, bicyclists have been told to ride in the street. And they don't get cleared of snow.	6/24/2014 6:36 PM
17	open for debate.	6/24/2014 5:08 PM
18	Many people use it to walk to where they are going. Had some inexpensive houses and nice trees would be nice if the university gave some of it back as mixed income housing. Their expansions cause housing tensions and war with neighbors to try and get the place first. Few places left desirable and affordable. Could even require references and credit history.	6/24/2014 2:34 PM
19	I'd rather see a continuous,seamless pathway on the railroad corridor	6/24/2014 11:08 AM
20	Just another cycle track grid.	6/24/2014 9:14 AM

21	connectivity at key points	6/24/2014 7:28 AM
22	What is "relationship?"	6/24/2014 7:13 AM
23	If it were actually built, it would be more suitable for longer distance trips, as there are relatively few entrances and exits. Vassar Street would probably appeal more to shorter trips, say across the MIT campus.	6/24/2014 1:00 AM
24	Parallel.	6/23/2014 11:41 PM
25	Delineate it clearly.	6/23/2014 11:02 PM
26	Path should connect to Vassar Street at many logical locations.	6/23/2014 12:40 PM
27	this pedestrian and bike trail along the rail corridor can be linked to vassar at key locations along pacific street to give easy access to all the student dorms- sidney pacific, ashdown and warehouse , to the MIT campus and recreation area.	6/23/2014 12:14 PM
28	Connect with existing bike path	6/23/2014 10:07 AM
29	This is going out on a limb, but what about making the grand junction path bikes-only, that is, closed to pedestrians. Grand Junction path can then be a bicycle "highway" allowing cyclists to go much faster, and safer for both bikes and peds by eliminating the potential for collisions. Vassar can stay as the pedestrian route, since the cycletrack on Vassar already functions as an extension of the sidewalk anyway. Because the cycle track is at the same height as the sidewalk, there's too many pedestrians walking obliviously along it for it to be a good route for bicycles. Post signage at Vassar indicating that cyclists should use the Grand Junction Path (but it's probably not worth the $$ to remove the cycle track). Post signage at Grand Junction telling pedestrians to use Vassar Street. Also post signs along Grand Junction telling all users to keep right and maybe paint a yellow line down the middle of the path to reinforce this. Because Grand Junction and Vassar are so nearly identical in their routes, I don't think it's inconvenient for either pedestrians or bicyclists to be segregated.	6/23/2014 7:35 AM
30	Totally different: a linear park or mountain bike course or something, there's plenty of bike lanes already	6/23/2014 4:06 AM
31	That is a key issue, Vassar provides a route almost exactly parallel to the track and these facilities are already very good	6/23/2014 3:50 AM
32	It should be accessible to Vassar.	6/23/2014 3:45 AM
33	friendly.	6/23/2014 1:19 AM
34	Parallel and connected.	6/22/2014 10:46 PM
35	Non-duplicative	6/22/2014 9:46 PM
36	I guess it would remove the need for the great bike lanes on Vassar	6/20/2014 11:52 AM
37	Not clear. Vassar street bike path near MIT is very congested, many pedestrians, driveways, parking garages, etc. The Grand Junction route would be major improvement.	6/20/2014 11:40 AM
38	Would no longer need vassal street cyclotrack	6/20/2014 10:26 AM
39	I think that on Vassar is fine	6/20/2014 9:27 AM
40	separate from Vassar as much as possible	6/20/2014 8:46 AM
41	If for any reason the Grand Junction path can't make it through this section, Vassar Street is an alternative *IF* the tie ins to the rest of the Grand Junction path to/from Vassar are well thought out. However, it looks like a well designed Grand Junction Path should be faster and safer than Vassar Street for cyclists.	6/20/2014 8:14 AM
42	Should be able to cross to Vassar Street	6/20/2014 6:31 AM

43	Should be able to cross to Vassar Street	6/20/2014 6:31 AM
44	Access from vassar would be nice	6/19/2014 11:31 PM
45	Connect onto or run alongside?	6/19/2014 9:51 PM
46	I don't see any problem with vassar st being a complete street and paralleling a MUP. It just provides more options for people.	6/19/2014 9:28 PM
47	?	6/19/2014 8:27 PM
48	I do not think the part of the path that parallels Vassar Street needs to be built. It is completely redundant and a silly thing to do. The northern part is nice but the part that is like twenty yards away from Vassar Street is just a ridiculous waste of money. Biking along that corridor (on either Vassar or Albany) is already very easy. Sure, crossing Mass Ave can be tough but so what? Just fix the intersections at Mass Ave rather than building a whole new redundant path. Note that I do think the northern part (after Vassar Street ends) that goes off towards Somerville would be very useful.	6/19/2014 8:16 PM
49	don't know	6/19/2014 7:43 PM
50	Vassar is a great example of combining and blending a vehicle traffic with bikes path and sidewalk. However, Vassar traffic is more local. There is is great need for a light rail to connect Allston with Cambridge MIT and east Cambridge area. It would also re-leave some congestion from Green and Red lines.	6/19/2014 7:07 PM
51	If it can connect to the awesome bike path on Vassar, that would be great.	6/19/2014 12:12 PM
52	Vassar street is sufficient for pedestrian and bike use.	6/18/2014 7:28 PM
53	Parallel? Not sure what you're asking here.	6/18/2014 1:12 PM
54	Offset.	6/17/2014 7:57 PM
55	If the distance is the same as Vassar St cycletrack, it is redundant. Must go further and connect all the way to nearby existing paths to be of significant added value.	6/17/2014 5:30 PM
56	connected at every opportunity. so many people use the new path next to the ROTC building, I think that's a sign of how much need for access there is	6/17/2014 4:17 PM
57	Provides another option and also should have outlets to Vassar.	6/17/2014 1:07 PM
58	physical separation so that cars don't park, or drift into it.	6/17/2014 6:58 AM
59	If Vassar is incorporated into this passage, it will be critical to interconnect it in a safe and easily traversed manner.	6/17/2014 6:00 AM
60	Converting to and from Vassar should be easy and well planned out.	6/16/2014 10:58 PM
61	Connections at access points	6/16/2014 10:44 PM
62	I think the current separated bike lane could be reused, given how tight the rail right-of-way is. The current version isn't too bad. (Gated crossings on the various parking lots would be a nice touch, though.)	6/16/2014 10:29 PM
63	Separate from the street but easily accessible from Vassar	6/16/2014 10:02 PM
64	Marked "exits" or mini cross street paths	6/16/2014 9:00 PM
65	As designed Vassar Street fails as a bike route. The cycle-track is at grade with pedestrians creating numerous bike/pedestrian conflicts. The multi-use path would hopefully relieve some of these.	6/16/2014 8:29 PM
66	As integrated with the city as possible so that it can expand beyond the confines of campus.	6/16/2014 8:13 PM

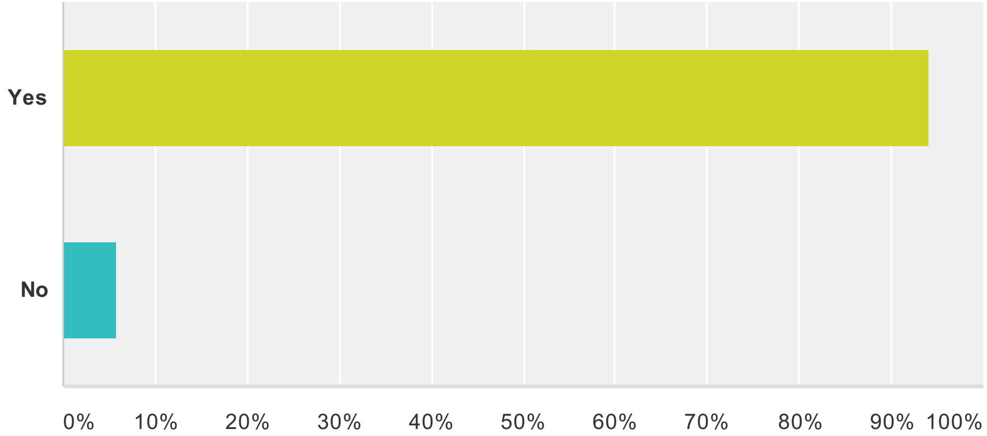
67	separate	6/16/2014 7:22 PM
68	separate	6/16/2014 6:04 PM
69	Not sure. Let's see what the designers suggest.	6/16/2014 5:15 PM
70	Since Vassar St has a bike path on it already, it would make to include it. However the intersection of Vassar and Mass Ave is one of the most dangerous intersections in Cambridge for bicyclists, as the Globe recently documented. Visibility and regulation in that intersection would have to be improved. I regularly bike from mid-Cambridge to Symphony area and I avoid that intersection at busy times.	6/16/2014 5:14 PM
71	It can utilize the existing cycle tracks on Vassar street, but they need to be revitalized a bit and have more signs so people do not walk in them.	6/16/2014 3:37 PM
72	It should use the existing bike lanes on Vassar, and only use the RR right-of-way west and east of Vassar.	6/16/2014 3:36 PM
73	The relationship be to Vassar Street is to have more business, jobs, hotel, & homes.	6/16/2014 3:26 PM
74	Path should be away from car traffic. Separate bikes and pedestrians if possible.	6/16/2014 12:37 PM
75	Intermittent connections, otherwise self-contained?	6/16/2014 12:14 PM
76	It runs parallel, but they are separate systems. I would not recommend funneling cyclists off the Junction Path onto Vassar.	6/16/2014 12:10 PM
77	Different facilities for different cyclists and different OD pairs.	6/16/2014 11:40 AM
78	It should be a separate path if possible.	6/16/2014 11:39 AM
79	separated lane by paint, with a buffer, when possible.	6/16/2014 11:15 AM
80	detached	6/16/2014 10:00 AM
81	could connect with Vassar, but should be it's own independent pathway.	6/16/2014 9:46 AM
82	Exclusive	6/16/2014 9:38 AM
83	Vassar Street could function more as a "slow-lane" for bikes, for trips in the immediate MIT area. Grand Junction would allow for faster-paced travel with fewer intersections/interruptions	6/16/2014 9:23 AM
84	not sure	6/16/2014 9:18 AM
85	GJC : Vassar Street = interstate : local road	6/16/2014 9:07 AM
86	Both corridors should be made available. When planning for cars, we don't worry about the creation of a second road supplanting the role of another in the transportation network, nor do we consider two roads in the same area headed roughly in the same direction to be redundant. We should move past thinking of bike infrastructure in these ways.	6/16/2014 9:07 AM
87	I dont know where vassar st it	6/16/2014 8:43 AM
88	I think it would be useful as a bicycle "relief route" - a direct way to connect those areas without having to further bog down traffic on Vassar street.	6/16/2014 8:31 AM
89	Cross-connections. An alternate north-south path.	6/16/2014 8:03 AM
90	This path could relieve traffic on Vassar (pedestrians and cyclists)	6/16/2014 2:53 AM

91	Vassar speeds should be much more restricted. Think of the Rail Corridor as the "express" train and Vassar Street's cycle tracks as the "local."	6/16/2014 2:20 AM
92	Make sure that there is signage on each route informing cyclists of the adjacent route, i.e., signs on Vassar Street telling cyclists of the nearby Grand Junction Path (and its connection to the Somerville Community Path). Motorists are informed about other routes that are nearby or coming up down the ride. Why not cyclists as well? "Somerville Community Path --> 2 miles ahead".	6/16/2014 12:27 AM
93	Cordial ;)	6/15/2014 11:44 PM
94	One could make it bike/ pedestrian promenade w/ vendors (coffee shop for example)	6/15/2014 11:29 PM
95	Separate but with connections	6/15/2014 11:02 PM
96	Separated. Not sure I understand this question.	6/15/2014 10:16 PM
97	separate if possible	6/15/2014 9:52 PM
98	Separated clearly and completely	6/15/2014 9:46 PM
99	Elevated from street --separate from traffic. Two way cycle traffic is fine as long as there isn't a risk of getting pushed into traffic	6/15/2014 9:31 PM
100	Not sure	6/15/2014 9:19 PM
101	Parallel?	6/15/2014 9:11 PM
102	Equal to, not lesser than Vassar	6/15/2014 9:09 PM
103	Include	6/15/2014 8:58 PM
104	Multiple connections to Vassar St. between BU Bridge and Main St., but with carefully designed merges	6/15/2014 8:52 PM
105	Not sure	6/15/2014 8:40 PM
106	It should be separate from Vassar Street. Destroying the continuity of the path will lead to a vastly decreased usage. This is empirically proven. Vassar Street cycletracks will supplement the Grand Junction Path. They should never replace it.	6/15/2014 8:40 PM
107	Don't know.	6/15/2014 8:32 PM
108	It could be a supplement for bike/pedestrians on Vassar st.	6/15/2014 8:30 PM
109	A separate, but very close additional path/lane	6/15/2014 8:24 PM
110	An alternative for bikes and peds which eliminates conflicts with motorized vehicles.	6/15/2014 8:22 PM
111	Along but shielded from?	6/15/2014 8:14 PM
112	supplementary	6/15/2014 8:13 PM
113	Occasional junctions	6/15/2014 8:11 PM
114	Parallel	6/15/2014 8:05 PM
115	Idk	6/15/2014 7:44 PM
116	Doesn't matter to me	6/15/2014 7:41 PM
117	Parallel but accessible	6/15/2014 7:37 PM
118	no opinion	6/15/2014 7:25 PM

119	Access via Vassar at logical points. Signs and sharrows directing cycling traffic to the path.	6/15/2014 7:22 PM
120	Parallel to Vassar seems to be the most logical place	6/15/2014 7:14 PM
121	bike stop light	6/15/2014 7:06 PM
122	Don't understand the question	6/15/2014 7:04 PM
123	It would replace Vassar st traffic	6/15/2014 7:04 PM
124	Vassar Street has excellent bike infrastructure that should be replicated throughout Boston, Somerville, Cambridge, and beyond. I'm not sure how the Vassar Street infrastructure should be connected to the Grand Junction Path.	6/15/2014 7:00 PM
125	Bike lanes	6/15/2014 6:59 PM
126	Replace it. Vassar Street is a version 1.0 cycle track with many problematic issues.	6/15/2014 6:45 PM
127	Vassar street should be the main bike and owed corridor. It is fairly low traffic and needs more bike and ped traffic to enliven it. Otherwise it's more like a back alley.	6/14/2014 7:05 PM
128	Vassar Street already has a world class bike facility, and building a separate path parallel to it seems redundant. Path planners should be looking at the option of making use of this existing facility by routing path traffic onto Vassar Street. This could potentially reduce costs and be less challenging from an engineering perspective. With this option, planners could look at making some serious and needed safety improvements to the intersection at Mass Ave/Vassar Street.	6/14/2014 1:24 PM
129	to promote access and use of non-driving modes	6/14/2014 10:51 AM
130	Not sure. Vassar St is a good corridor, but does not connect to Boston, so not ideal for bikes.	6/14/2014 8:42 AM
131	Not sure. I don't know all of the options.	6/14/2014 8:21 AM
132	Not sure.	6/13/2014 9:49 PM
133	it should connect. the vassar street cycle track as it is now, dumping folks out on a sidewalk near a rotary.	6/13/2014 2:58 PM
134	Vassar Street is a great model for how streets can be treated in Cambridge and beyond, but it's still a street. The Grand Junction Path and Vassar Street will have an integral relationship and connect to each other, but I don't think that Vassar Street is a substitute for the Grand Junction Path. The path is a completely different amenity that will serve bicycling effectively but is much more about pedestrians and casual users, and its ability to function as a linear park. Vassar Street serves transportation needs very well, but the Grand Junction Path serves a much, much broader array of needs for the MIT and broader community.	6/13/2014 1:29 PM

Q6 If the Grand Junction Path was built, would you use it?

Answered: 170 Skipped: 3



Answer Choices	Responses	
Yes	**94.12%**	160
No	**5.88%**	10
Total		**170**

Q7 For what kinds of trips?

Answered: 154 Skipped: 19

#	Responses	Date
1	out and about trips	7/17/2014 9:00 PM
2	Any and all	7/1/2014 7:23 AM
3	Commuting, recreational	6/30/2014 4:30 PM
4	Getting STATA, STATA to Ashdown, Mass ave to East Cambridge	6/30/2014 4:25 PM
5	Bicycles and pedestrians walkign dogs do not go well together. But if I "WERE" to use it I would use it for recreation/exercise	6/30/2014 4:20 PM
6	short tips by bike, foot	6/30/2014 3:54 PM
7	Work, shopping, everyday commuting to get to places	6/30/2014 3:41 PM
8	Commuting through areag via bike	6/30/2014 3:08 PM
9	If anything,bike	6/30/2014 3:01 PM
10	East Cambridge to BU Bridge	6/30/2014 2:56 PM
11	occasional trips to BU / Fenway area	6/29/2014 9:41 PM
12	Since I don't live or work in the area, I would be using it to get to Kendall Sq cinema, lectures and other events at MIT and also, if it connects to the PDW paths and the Green Line extension it would be a fantastic way for me to get out to the minuteman commuter bikeway and beyond.	6/28/2014 7:40 PM
13	Biking between Kendall and MIT, but honestly I don't do this trip much.	6/26/2014 10:56 AM
14	Commuting, recreation, shopping, dining	6/25/2014 10:52 AM
15	Rail.	6/25/2014 10:51 AM
16	all kinds	6/25/2014 10:37 AM
17	Mostly commuting.	6/25/2014 7:14 AM
18	If I was coming from or going to the Boston side, or headed through to the north	6/24/2014 11:05 PM
19	I ride from my office at 35 Medford St. in Somerville to the Zesiger Center every day, and this route lies exactly along the railway where this Path would go, so I would use it every day to travel from work to MIT.	6/24/2014 10:05 PM
20	walk and bike to whole foods, work	6/24/2014 5:08 PM
21	Anything to get off the green line- also too small for bikes. Connection to other train stops very desirable. B (T) It is unreliable in terms of timing and takes longer and longer to get anywhere as universities expand.	6/24/2014 2:34 PM
22	Travel between my home on the Cambridge/Somerville line near the Grand Junction corridor and MIT and BU.	6/24/2014 11:08 AM

23	Commuting to the gym and work.	6/24/2014 9:14 AM
24	east/west campus connectivity	6/24/2014 7:28 AM
25	To move myself from place to place along or beyond the path.	6/24/2014 7:13 AM
26	Commuting by bicycle from West Campus to Kendall Square.	6/24/2014 1:00 AM
27	Commuting and recreation.	6/23/2014 11:41 PM
28	Commuting and Recreation, I bike to work in Central sq and sometimes have meetings that I bike to in the area.	6/23/2014 11:02 PM
29	What I already said.	6/23/2014 12:40 PM
30	trips from campus to union square, trips from ashdown-sidney pacific dorms to charles river, BU bridge and across to boston.	6/23/2014 12:14 PM
31	exercise, recreation	6/23/2014 10:33 AM
32	bicycle trips to BU area	6/23/2014 7:35 AM
33	I would you use it to get to MIT for school and work but that would mean I would stop using the Vassar cycle path. This money could be better spent on a different project	6/23/2014 3:50 AM
34	As mentioned above, "Going to the grocery store, visits between friends, going out on the town, jogging, or just walking or cycling around town."	6/23/2014 1:19 AM
35	leisure and commute	6/22/2014 11:40 PM
36	Biking. walking. Maybe jogging.	6/22/2014 10:46 PM
37	Cycling	6/20/2014 11:52 AM
38	to work at MIT, shopping and recreation by bike from my home near Central Square..	6/20/2014 11:40 AM
39	Cycling, getting around. It's on my way to MIT from my house	6/20/2014 9:27 AM
40	commuting, recreation and errands	6/20/2014 8:46 AM
41	Everything but work commute.	6/20/2014 8:14 AM
42	All kinds	6/20/2014 6:31 AM
43	All kinds	6/20/2014 6:31 AM
44	Bicycle.	6/20/2014 2:36 AM
45	Commuting mainly, access to other bike paths.	6/19/2014 11:31 PM
46	To and from work and other neighborhoods in the city that I frequent, which are many!	6/19/2014 9:51 PM
47	Trips to work.	6/19/2014 9:28 PM
48	many	6/19/2014 8:27 PM
49	work out, pleasure	6/19/2014 7:43 PM
50	Any trips between points in Allston and East Cambridge/MIT areas.	6/19/2014 7:07 PM
51	Shopping, commuting, fun (visiting friends, restaurants)	6/19/2014 6:46 PM

52	See response to question 3	6/19/2014 12:12 PM
53	Bike, walk	6/19/2014 8:01 AM
54	bike trips using the BU Bridge, trips to Kendall square	6/18/2014 4:28 PM
55	As needed (2-3 times per week, including commutes from BU and/or MIT)	6/18/2014 1:12 PM
56	work and social	6/18/2014 9:08 AM
57	Walking and biking.	6/17/2014 7:57 PM
58	visiting friends who live in East Cambridge, going to restaurants in Kendall Square, movies at Kendall Square cinema	6/17/2014 5:30 PM
59	assuming "path" doesn't include transit, I'd still use it for walking the dog and for walking to those parts of MIT and the river that are reached faster and more pleasantly off existing roads	6/17/2014 4:17 PM
60	Commuting	6/17/2014 1:59 PM
61	Visiting MIT locations, the river and recreational trips	6/17/2014 1:07 PM
62	errands, work,	6/17/2014 6:58 AM
63	Trips where I need to get to neighborhoods on either end of the path or on points along the path.	6/17/2014 6:00 AM
64	All heading towards Allston/Brighton	6/16/2014 10:58 PM
65	Work and family trips	6/16/2014 10:44 PM
66	Recreational, and business. Social as well.	6/16/2014 10:29 PM
67	cycling	6/16/2014 10:02 PM
68	Bike trips	6/16/2014 9:36 PM
69	Errands, shopping, meal and music trips	6/16/2014 9:00 PM
70	Commuting and interoffice walking.	6/16/2014 8:29 PM
71	Biking across the city, within cambridge, getting to my partner's house, getting to school, shopping.	6/16/2014 8:13 PM
72	crossing the river to cambridge daily for work, and recreational access to the somerville community path and minute man trail and even the north end and the science museum! Along with the casey arborway project, suddenly there's potential to connect the minute man to the emerald necklace. I am very excited about this project.	6/16/2014 7:22 PM
73	Home - work	6/16/2014 6:04 PM
74	Biking! Fast access to Kendall.	6/16/2014 5:15 PM
75	See #3	6/16/2014 5:14 PM
76	Trips to Boston/Allston/Brighton, east cambridge. To the office near the Cambridgeside galleria. Connection to the greenline extension	6/16/2014 3:37 PM
77	when ever it was close to my path of travel.	6/16/2014 3:36 PM
78	The kinds of trips go around the world.	6/16/2014 3:26 PM
79	biking, walking	6/16/2014 3:23 PM

80	bike trips	6/16/2014 12:37 PM
81	Recreational	6/16/2014 12:14 PM
82	All of the kinds mentioned above! It would provide critical connection between Cambridge and Allston, two areas that would greatly benefit from a shared community and receive an economic boost.	6/16/2014 12:10 PM
83	Probably more recreational since this is not currently a commuting path for me.	6/16/2014 11:40 AM
84	Cycling to/from work and school as well as recreational trips.	6/16/2014 11:39 AM
85	Travel through to BU bridge and connect to paths heading to Minuteman, once constructed.	6/16/2014 11:15 AM
86	Commuting to work & for pleasure.	6/16/2014 11:03 AM
87	leisure	6/16/2014 10:00 AM
88	commuting, shopping, recreation, and to take new riders out into the city	6/16/2014 9:46 AM
89	Biking to Kendall from JP/ Roxbury.	6/16/2014 9:38 AM
90	Shopping, going to concerts, and exploring Cambridge, Boston, and neighboring cities.	6/16/2014 9:23 AM
91	commute	6/16/2014 9:18 AM
92	Bicycling around the city	6/16/2014 9:07 AM
93	Trips in the region to access work/entertainment	6/16/2014 9:07 AM
94	Crosstown, avoidibg mass ave, easy allston-points northeast of boston.	6/16/2014 8:43 AM
95	commuting	6/16/2014 8:31 AM
96	commute and pleasure.	6/16/2014 8:03 AM
97	I could bike between e cambridge and watertown, e cambridge and brookline, and it would be way quicker	6/16/2014 2:53 AM
98	Personal and business, from Brookline and Brighton to Cambridge and Somerville.	6/16/2014 2:20 AM
99	Everything. Traveling to business/scientific meetings, shopping and visiting friends in Boston, and recreation/exercise. I would also bring guests and visitors down the path when they are visiting Boston. It would contribute to the appeal of the corridor.	6/16/2014 12:27 AM
100	To go to work (Longwood)	6/16/2014 12:09 AM
101	Commuting	6/15/2014 11:44 PM
102	Commute, if promenade on a weekend.	6/15/2014 11:29 PM
103	Bike trips to Kendall Square area.	6/15/2014 11:05 PM
104	Errands	6/15/2014 11:02 PM
105	Commuting through, meeting people in the area at local businesses, and maybe even working in the area in the future	6/15/2014 10:59 PM
106	Commuting, errands	6/15/2014 10:17 PM
107	Commuting. Business meetings. Personal.	6/15/2014 10:16 PM
108	commuting and pleasure	6/15/2014 9:52 PM

109	Commute by bike to and from work	6/15/2014 9:46 PM
110	Commuting	6/15/2014 9:35 PM
111	Commuting excercise and errands. Bike and running.	6/15/2014 9:31 PM
112	going to school, meeting up with friends, running errands, exercising	6/15/2014 9:30 PM
113	Trips between Somerville and boston proper	6/15/2014 9:19 PM
114	recreation, commuting, errands	6/15/2014 9:11 PM
115	Daily commute	6/15/2014 9:09 PM
116	Walking and cycling	6/15/2014 8:58 PM
117	Trips from the River to MIT to avoid streets	6/15/2014 8:52 PM
118	Shopping/errands	6/15/2014 8:40 PM
119	Recreational and professional. I would commute to work on it. I would use it for recreational trips, and I would use it to travel and buy groceries, hardware, etc. I would also take it on weekend nights to go out to bars and restaurants with my friends.	6/15/2014 8:40 PM
120	Cycling	6/15/2014 8:37 PM
121	Recreational and to and from work.	6/15/2014 8:32 PM
122	Mostly recreation	6/15/2014 8:30 PM
123	Exercise, travel, commuting	6/15/2014 8:24 PM
124	Commutes	6/15/2014 8:22 PM
125	Bike trips	6/15/2014 8:14 PM
126	commutes, recreation	6/15/2014 8:13 PM
127	Getting to friends' houses. Going to events at MIT.	6/15/2014 8:11 PM
128	Social trips, getting to MIT.	6/15/2014 8:10 PM
129	Commuting to boston	6/15/2014 8:09 PM
130	Work, exercise, leisure, nightlife	6/15/2014 8:05 PM
131	Errands, Recreation	6/15/2014 7:58 PM
132	Commute and pleasure	6/15/2014 7:44 PM
133	Running and riding to work	6/15/2014 7:41 PM
134	Pleasure riding would be great	6/15/2014 7:37 PM
135	commuting	6/15/2014 7:25 PM
136	ALL	6/15/2014 7:24 PM
137	See above	6/15/2014 7:22 PM

138	commuting, getting to points in Cambridge, enjoying riding to points in Cambridge and not fearing I'm going to get flattened on River Street	6/15/2014 7:17 PM
139	If the path is successful I will use it every M-F as it would replace the Brookline St/Mass Ave part of my commute.	6/15/2014 7:14 PM
140	commute	6/15/2014 7:06 PM
141	Recreation	6/15/2014 7:04 PM
142	Recreational	6/15/2014 7:04 PM
143	Biking to/from work (Allston-MIT). Depending on its path, going to other parts of Cambridge and Somerville to socialize.	6/15/2014 7:00 PM
144	See above all on bike	6/15/2014 6:59 PM
145	recreational cycling, date night cycling, commuter cycling	6/15/2014 6:45 PM
146	Work, errands, leisure	6/14/2014 4:18 PM
147	Transportation, and maybe some recreation.	6/14/2014 1:24 PM
148	commuting as well as recreation	6/14/2014 10:51 AM
149	Currently, for meeting up with friends, possibly for commuting	6/14/2014 10:03 AM
150	commute/travel between Boston/Cambridge on a bike.	6/14/2014 8:42 AM
151	Bike, ped, ADA. Commuting, recreation.	6/14/2014 8:21 AM
152	Home to work mainly.	6/13/2014 9:49 PM
153	possibly as an alternate commute path from downtown (over longfellow), down vassar to the path, then over to allston	6/13/2014 2:58 PM
154	I would use the Grand Junction Path to cross the Charles River to Boston in a comfortable, safe, and easy way. I would use it to go between the western end of the MIT campus and Kendall Square, as well as Lechmere and East Cambridge. I would use it to get to Somerville and beyond. Additionally, I would use it for walks, and to show off a really unique amenity to visitors.	6/13/2014 1:29 PM

Q8 (Optional) How did you hear about this study?

Answered: 145 Skipped: 28

#	Responses	Date
1	Friends of the GJP	6/30/2014 4:30 PM
2	Walking by today	6/30/2014 4:25 PM
3	Area 4 Coalition	6/30/2014 4:20 PM
4	News article	6/30/2014 3:54 PM
5	Frienda that are involved with the project. Cambridge Bikes Facebook group. Friends of Grand Junction Path Facebook Group	6/30/2014 3:41 PM
6	Signs on door of STATA	6/30/2014 3:08 PM
7	MIT Events	6/30/2014 3:01 PM
8	Invitation City council, email Tim Toomey & Co	6/30/2014 2:56 PM
9	Cambridge Bikes! Facebook page	6/29/2014 9:41 PM
10	Through the LivableStreets Alliance.	6/28/2014 7:40 PM
11	DUSP student email.	6/26/2014 10:56 AM
12	GreenPort listserve	6/25/2014 10:52 AM
13	email	6/25/2014 10:37 AM
14	Mother-in-law, who heard about it from Boston Cyclists Union.	6/25/2014 7:14 AM
15	MIT openhouse 6/24	6/24/2014 11:05 PM
16	I attended the event at MIT on 6/24/2014.	6/24/2014 10:05 PM
17	events.mit.edu	6/24/2014 6:36 PM
18	via act-ma posting	6/24/2014 5:20 PM
19	member of ECPT and have been following this for years.	6/24/2014 5:08 PM
20	A friend in Cambridge told me. Cambridge has the most community spaces and nonprofit buildings that different non profit groups use. It is a shame its so far away. I am not near the 66.	6/24/2014 2:34 PM
21	Facebook	6/24/2014 11:08 AM
22	Greenport newsletter	6/24/2014 9:14 AM
23	mit web site	6/24/2014 7:28 AM

24	MIT Events calendar.	6/24/2014 7:13 AM
25	Via e-mail	6/24/2014 1:00 AM
26	email	6/23/2014 11:41 PM
27	Green port email list	6/23/2014 11:02 PM
28	Email from grandjunctionpath@gmail.com.	6/23/2014 12:40 PM
29	MIT email. I am a City Planning student at DUSP. My email is srawoot@mit.edu.	6/23/2014 12:14 PM
30	Catherine Vanderwaart	6/23/2014 7:35 AM
31	Email	6/23/2014 4:06 AM
32	through a department mailing list (I'm a grad student in city planning).	6/23/2014 1:19 AM
33	MIT email list	6/22/2014 11:40 PM
34	Through an email sent by Catherine V.	6/22/2014 10:46 PM
35	Email from Catherine	6/22/2014 10:08 PM
36	Facebook via MassBike	6/20/2014 11:52 AM
37	Cambridge Chronicle	6/20/2014 11:40 AM
38	MassBike and Boston Cyclist Union	6/20/2014 10:26 AM
39	Fbook and MIT cycling Club	6/20/2014 9:27 AM
40	facebook of massbike	6/20/2014 8:46 AM
41	MassBike	6/20/2014 8:14 AM
42	Facebook	6/20/2014 6:31 AM
43	Facebook	6/20/2014 6:31 AM
44	Maybe	6/20/2014 3:52 AM
45	Facebook.	6/20/2014 2:36 AM
46	Friend	6/19/2014 11:31 PM
47	Boston.com	6/19/2014 9:51 PM
48	MassBike Facebook post.	6/19/2014 9:28 PM
49	Facebook Mass Bike	6/19/2014 8:27 PM
50	Facebook	6/19/2014 7:43 PM
51	Cambridge Cronicle	6/19/2014 7:07 PM
52	Facebook feed (MassBike)	6/19/2014 6:46 PM
53	city email	6/19/2014 12:12 PM

54	Twitter	6/19/2014 8:01 AM
55	Cambridge Bike newsletter	6/18/2014 4:28 PM
56	Cambridge Bicycle Report, 18 June, via e-mail.	6/18/2014 1:12 PM
57	Grand Junction meeting	6/18/2014 9:08 AM
58	press	6/17/2014 5:30 PM
59	chronical article	6/17/2014 4:17 PM
60	Friends of the Grand Junction Facebook page	6/17/2014 1:59 PM
61	facebook	6/17/2014 6:58 AM
62	reddit	6/17/2014 6:00 AM
63	Facebook	6/16/2014 10:58 PM
64	Facebook	6/16/2014 10:44 PM
65	Facebook	6/16/2014 10:29 PM
66	my husband sent me the link	6/16/2014 9:36 PM
67	BCU	6/16/2014 9:00 PM
68	Cambridge Chronicle and Tab	6/16/2014 8:29 PM
69	Boston cyclists union.	6/16/2014 8:13 PM
70	facebook	6/16/2014 6:04 PM
71	An article on WickedLocal.com	6/16/2014 5:15 PM
72	Cambridge Chronicle	6/16/2014 3:44 PM
73	Facebook/bike union	6/16/2014 3:37 PM
74	Facebook.	6/16/2014 3:36 PM
75	I heard it from the Cambridge Chronicle online.	6/16/2014 3:26 PM
76	cambridge chronicle	6/16/2014 3:23 PM
77	facebook	6/16/2014 2:33 PM
78	Boston Cyclists Union	6/16/2014 12:37 PM
79	Boston Bicycle Union	6/16/2014 12:14 PM
80	I work in transportation.	6/16/2014 12:10 PM
81	Cambridge Bike Committee mailing list	6/16/2014 11:40 AM
82	Facebook post by the Boston Cyclists Union.	6/16/2014 11:39 AM
83	Cambridge Bikes!, Facebook - Minuteman path, MIT cyclists	6/16/2014 11:15 AM

84	BCU	6/16/2014 11:03 AM
85	facebook	6/16/2014 10:00 AM
86	Facebook	6/16/2014 9:38 AM
87	BCU Facebook status	6/16/2014 9:23 AM
88	Facebook	6/16/2014 9:07 AM
89	Facebook	6/16/2014 8:43 AM
90	Facebook - boston cyclists union	6/16/2014 8:31 AM
91	facebook	6/16/2014 8:03 AM
92	Boston Cyclists Union facebook status	6/16/2014 2:53 AM
93	Boston Cyclists Union	6/16/2014 12:27 AM
94	BCU FB post.	6/16/2014 12:09 AM
95	Facebook	6/15/2014 11:44 PM
96	Facebook?	6/15/2014 11:29 PM
97	BCU Facebook page	6/15/2014 11:05 PM
98	Facebook	6/15/2014 10:59 PM
99	Facebook- cyclist union	6/15/2014 10:47 PM
100	Facebook	6/15/2014 10:17 PM
101	Posted on Facebook by Boston cyclists union.	6/15/2014 10:16 PM
102	I follow the BCU on Facebook	6/15/2014 9:52 PM
103	Boston bike union	6/15/2014 9:46 PM
104	Facebook	6/15/2014 9:35 PM
105	Facebook	6/15/2014 9:31 PM
106	Facebook	6/15/2014 9:30 PM
107	BCU	6/15/2014 9:19 PM
108	Boston Cyclists Union Facebook page	6/15/2014 9:11 PM
109	Facebook	6/15/2014 8:58 PM
110	Cambridge Bikes!	6/15/2014 8:52 PM
111	Cambridge Bikes FB group	6/15/2014 8:40 PM
112	Friends of Grand Junction Path.	6/15/2014 8:40 PM
113	Facebook	6/15/2014 8:37 PM

114	Cambridge Bikes Facebook page.	6/15/2014 8:32 PM
115	Boston cyclists union	6/15/2014 8:30 PM
116	I work for MIT Office for Campus Planning	6/15/2014 8:13 PM
117	Facebook	6/15/2014 8:11 PM
118	Facebook	6/15/2014 8:10 PM
119	Boston Cyclist Union	6/15/2014 8:09 PM
120	Boston Cyclists' Union	6/15/2014 7:58 PM
121	Facebook	6/15/2014 7:44 PM
122	Facebook	6/15/2014 7:41 PM
123	Facebook	6/15/2014 7:38 PM
124	Facebook	6/15/2014 7:37 PM
125	facebook	6/15/2014 7:25 PM
126	Facebook	6/15/2014 7:24 PM
127	Post on FB	6/15/2014 7:22 PM
128	I am a member of the Boston Cyclists Union and heard about it through them as well as Mr Lee Toma	6/15/2014 7:17 PM
129	Boston Cyclists Union	6/15/2014 7:14 PM
130	Boston Cyclists Union's Facebook page.	6/15/2014 7:04 PM
131	Boston cyclists union	6/15/2014 7:04 PM
132	Boston Cyclists Union on Facebook shared the study.	6/15/2014 7:00 PM
133	Facebook	6/15/2014 6:59 PM
134	GJP mailing list	6/15/2014 6:45 PM
135	I'm a planner / Facebook	6/14/2014 7:05 PM
136	Facebook	6/14/2014 4:18 PM
137	Friends of the Grand Junction Facebook page	6/14/2014 1:24 PM
138	friend posted on Facebook	6/14/2014 10:51 AM
139	Fb	6/14/2014 10:17 AM
140	Facebook	6/14/2014 10:03 AM
141	facebook link	6/14/2014 8:42 AM
142	Friends of the Grand junction Path listserv.	6/14/2014 8:21 AM
143	I am interested in bike paths and searched online.	6/13/2014 9:49 PM

144	email from a neighbor	6/13/2014 2:58 PM
145	Email from Friends of the Grand Junction Path.	6/13/2014 1:29 PM

#1

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 13, 2014 10:12:40 AM
Last Modified: Friday, June 13, 2014 10:28:53 AM
Time Spent: 00:16:13
IP Address: 24.61.11.63

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I cross at Fort Washington and Pacific Street on a regular basis on foot and on bike. I use the Vassar Street cycle track, and sometimes continue up Galileo Way on bike which is not very comfortable. I also travel across the BU Bridge frequently, which has multiple areas that are uncomfortable on foot, and is very uncomfortable on bike.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

I absolutely believe that the ability to cross the Charles River with an off-road path would improve mobility drastically. Additionally, another alternative route to get to Kendall Square from the western part of MIT will be incredible.

Q3: For what kinds of trips?

Commuting between Boston to Cambridge for work and academics. Recreation close to the river will be much easier for people of all ages and abilities.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Getting over the Charles River is essential. Having signs and interesting features that allow people to realize all the amazing places they can discover along this path will make it very successful.

Q5: What should its relationship be to Vassar Street?

Vassar Street is a great model for how streets can be treated in Cambridge and beyond, but it's still a street. The Grand Junction Path and Vassar Street will have an integral relationship and connect to each other, but I don't think that Vassar Street is a substitute for the Grand Junction Path. The path is a completely different amenity that will serve bicycling effectively but is much more about pedestrians and casual users, and its ability to function as a linear park. Vassar Street serves transportation needs very well, but the Grand Junction Path serves a much, much broader array of needs for the MIT and broader community.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

I would use the Grand Junction Path to cross the Charles River to Boston in a comfortable, safe, and easy way. I would use it to go between the western end of the MIT campus and Kendall Square, as well as Lechmere and East Cambridge. I would use it to get to Somerville and beyond. Additionally, I would use it for walks, and to show off a really unique amenity to visitors.

Q8: (Optional) How did you hear about this study?

Email from Friends of the Grand Junction Path.

#2

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 13, 2014 11:53:53 AM
Last Modified: Friday, June 13, 2014 11:57:39 AM
Time Spent: 00:03:46
IP Address: 23.30.182.169

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

transit, car, bike

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Only if it doesn't preclude future DMU service between Allston and Cambridge.

Q3: **For what kinds of trips?**

I guess for bikers and lazy joggers. who can't make it down a little further on the river to get up onto the bu bridge.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

fitting it in alongside rail and transit, which must take priority

Q5: **What should its relationship be to Vassar Street?**

it should connect. the vassar street cycle track as it is now, dumping folks out on a sidewalk near a rotary.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

possibly as an alternate commute path from downtown (over longfellow), down vassar to the path, then over to allston

Q8: **(Optional) How did you hear about this study?**

email from a neighbor

#3

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 13, 2014 6:45:43 PM
Last Modified: Friday, June 13, 2014 6:48:35 PM
Time Spent: 00:02:52
IP Address: 66.31.200.137

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike and Fulkerson St + Binney St

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, it would.

Q3: **For what kinds of trips?**

From my home in East Cambridge to Kendall square. In the future, I would imagine also to reach the Somerville community path.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Does it connect effectively to the Somerville community path or will people just find more practical to use Medford St?

Q5: **What should its relationship be to Vassar Street?**

Not sure.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Home to work mainly.

Q8: **(Optional) How did you hear about this study?**

I am interested in bike paths and searched online.

#4

COMPLETE

Collector: New Web Link (Web Link)
Started: Saturday, June 14, 2014 5:16:14 AM
Last Modified: Saturday, June 14, 2014 5:20:57 AM
Time Spent: 00:04:43
IP Address: 174.63.124.114

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike/ped along Vassar Street, arounf MIT, and twin Cities.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes!

Q3: **For what kinds of trips?**

Bike, ped, ADA, skating, strollers, etc. Commuting, recreation.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Connections with Community Path extension and Allston.

Q5: **What should its relationship be to Vassar Street?**

Not sure. I don't know all of the options.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Bike, ped, ADA. Commuting, recreation.

Q8: **(Optional) How did you hear about this study?**

Friends of the Grand junction Path listserv.

#5

COMPLETE

Collector: New Web Link (Web Link)
Started: Saturday, June 14, 2014 5:35:15 AM
Last Modified: Saturday, June 14, 2014 5:41:52 AM
Time Spent: 00:06:37
IP Address: 107.3.81.203

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

car, bike, bus. Vassar St, Albany St, Mass Ave. Pretty much walk everywhere.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

If the path could continue over the railroad bridge to Boston, it would be a dramatic improvement for bike mobility. Cycling through the BU Bridge Rotary is unsafe, and otherwise very slow going through the crosswalks.

Q3: **For what kinds of trips?**

commuting, general travel

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

accommodating both rail and a multi-use path somehow, and safely.

Q5: **What should its relationship be to Vassar Street?**

Not sure. Vassar St is a good corridor, but does not connect to Boston, so not ideal for bikes.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

commute/travel between Boston/Cambridge on a bike.

Q8: **(Optional) How did you hear about this study?**

facebook link

#6

COMPLETE

Collector: New Web Link (Web Link)
Started: Saturday, June 14, 2014 6:59:19 AM
Last Modified: Saturday, June 14, 2014 7:02:34 AM
Time Spent: 00:03:15
IP Address: 209.6.91.82

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Biking

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

It would provide a safe way to get to other parts of the city and suburbs and improve commuting routes for bicyclist

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Protected bike lane, designing safe intersections for bicyclists, so they can take safe left turns

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Currently, for meeting up with friends, possibly for commuting

Q8: **(Optional) How did you hear about this study?**

Facebook

#7

COMPLETE

Collector: New Web Link (Web Link)
Started: Saturday, June 14, 2014 7:13:01 AM
Last Modified: Saturday, June 14, 2014 7:17:26 AM
Time Spent: 00:04:25
IP Address: 24.218.18.240

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike on mass ave, path along river/memorial drive, or prospect ave and river st

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes. The path along the river is not in good condition for biking and is full of pedestrians.

Q3: For what kinds of trips? *Respondent skipped this question*

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Wide, smooth pavement, clearly marked entrances and exits

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: For what kinds of trips? *Respondent skipped this question*

Q8: **(Optional) How did you hear about this study?**

Fb

#8

COMPLETE

Collector: New Web Link (Web Link)
Started: Saturday, June 14, 2014 7:46:43 AM
Last Modified: Saturday, June 14, 2014 7:50:50 AM
Time Spent: 00:04:07
IP Address: 67.81.9.188

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

I have a consulting job in Kendall Square - this would be a great addition to the area. I bike to work on occasion and could also use this for inline skating (rollerblading).

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes.

Q3: **For what kinds of trips?**

Recreational, commuting.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

A surface area suitable for inline skating.

Q5: **What should its relationship be to Vassar Street?**

to promote access and use of non-driving modes

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

commuting as well as recreation

Q8: **(Optional) How did you hear about this study?**

friend posted on Facebook

#9

COMPLETE

Collector: New Web Link (Web Link)
Started: Saturday, June 14, 2014 10:04:17 AM
Last Modified: Saturday, June 14, 2014 10:23:52 AM
Time Spent: 00:19:35
IP Address: 50.12.166.15

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bicycle, on foot, bus, subway

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes

Q3: For what kinds of trips?

Regional bike transportation should be prioritized foremost in design.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

1) Connecting it to other paths to create a real off-street transportation network throughout Boston, Cambridge & Somerville, 2) well-designed, safe, signal-protected crossings, especially at Mass Ave, 3) separation between bike and pedestrian traffic.

Q5: What should its relationship be to Vassar Street?

Vassar Street already has a world class bike facility, and building a separate path parallel to it seems redundant. Path planners should be looking at the option of making use of this existing facility by routing path traffic onto Vassar Street. This could potentially reduce costs and be less challenging from an engineering perspective. With this option, planners could look at making some serious and needed safety improvements to the intersection at Mass Ave/Vassar Street.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Transportation, and maybe some recreation.

Q8: (Optional) How did you hear about this study?

Friends of the Grand Junction Facebook page

#10

COMPLETE

Collector: New Web Link (Web Link)
Started: Saturday, June 14, 2014 1:15:44 PM
Last Modified: Saturday, June 14, 2014 1:17:33 PM
Time Spent: 00:01:49
IP Address: 65.96.162.220

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Walking, biking, driving

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

YES!!!

Q3: **For what kinds of trips?**

Work, errands, leisure

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Connection with community path on one end and river path on the other

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Work, errands, leisure

Q8: **(Optional) How did you hear about this study?**

Facebook

#11

COMPLETE

Collector: New Web Link (Web Link)
Started: Saturday, June 14, 2014 4:01:34 PM
Last Modified: Saturday, June 14, 2014 4:05:24 PM
Time Spent: 00:03:50
IP Address: 208.54.36.161

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike walk transit

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

No we need transit here! We already have bike and ped accommodations on vassar and other parallels.

Q3: **For what kinds of trips?**

Transit

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

We need transit on this corridor. Must accommodate a future urban ring connection.

Q5: **What should its relationship be to Vassar Street?**

Vassar street should be the main bike and owed corridor. It is fairly low traffic and needs more bike and ped traffic to enliven it. Otherwise it's more like a back alley.

Q6: **If the Grand Junction Path was built, would you use it?**	No
Q7: For what kinds of trips?	*Respondent skipped this question*

Q8: **(Optional) How did you hear about this study?**

I'm a planner / Facebook

#12

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 3:41:00 PM
Last Modified: Sunday, June 15, 2014 3:44:50 PM
Time Spent: 00:03:50
IP Address: 66.30.14.230

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle. I use the river path, Mass. Ave., and the Vassar Street cycle track.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

without question

Q3: **For what kinds of trips?**

recreational cycling (connecting mid-Cambridge and Kendall to the Esplanade); commuter cycling along axes from N. Station to North Point to Kendall to Lower Allston to the LMA.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Crossings at busy intersections (Cambridge Street, Main Street, Broadway); connections to the Community Path in Somerville, to the Esplanade path system, and across Storrow Drive and the abandoned rail yard into Lower Allston.

Q5: **What should its relationship be to Vassar Street?**

Replace it. Vassar Street is a version 1.0 cycle track with many problematic issues.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

recreational cycling, date night cycling, commuter cycling

Q8: **(Optional) How did you hear about this study?**

GJP mailing list

#13

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 3:55:39 PM
Last Modified: Sunday, June 15, 2014 3:59:23 PM
Time Spent: 00:03:44
IP Address: 76.19.99.77

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Work. Shopping. Entertainment

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Connect to Olmsted bikeways to JP & Brookline. Also Davis Sq

Q5: **What should its relationship be to Vassar Street?**

Bike lanes

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

See above all on bike

Q8: **(Optional) How did you hear about this study?**

Facebook

#14

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 3:50:31 PM
Last Modified: Sunday, June 15, 2014 3:59:35 PM
Time Spent: 00:09:04
IP Address: 24.91.116.165

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, walk, bus across BU bridge, along Vassar St, up Mass Ave, through Kendall area

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, especially from the BU Bridge. The rotary in Cambridge is really challenging for pedestrians and cyclists, as is getting from the BU Bridge to Memorial Drive toward Mass Ave. The sidewalk/bike path is not wide enough for cyclists until you reach the BU boathouse.

Q3: **For what kinds of trips?**

Biking and walking. Easier access between Allston/BU and Central/Kendall/East Cambridge

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Safe, easy connection from BU Bridge to Grand Junction area in Cambridge.

Q5: **What should its relationship be to Vassar Street?**

Vassar Street has excellent bike infrastructure that should be replicated throughout Boston, Somerville, Cambridge, and beyond. I'm not sure how the Vassar Street infrastructure should be connected to the Grand Junction Path.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Biking to/from work (Allston-MIT). Depending on its path, going to other parts of Cambridge and Somerville to socialize.

Q8: **(Optional) How did you hear about this study?**

Boston Cyclists Union on Facebook shared the study.

#15

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:01:45 PM
Last Modified: Sunday, June 15, 2014 4:04:03 PM
Time Spent: 00:02:18
IP Address: 209.6.123.191

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

automobile and bicycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Recreation

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Safe crossings with motor vehicles

Q5: **What should its relationship be to Vassar Street?**

Don't understand the question

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Recreation

Q8: **(Optional) How did you hear about this study?**

Boston Cyclists Union's Facebook page.

#16

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:01:17 PM
Last Modified: Sunday, June 15, 2014 4:04:06 PM
Time Spent: 00:02:49
IP Address: 76.118.41.184

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Vassar st bike lanes, or drive car on mem drive

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

No

Q3: For what kinds of trips? *Respondent skipped this question*

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

It needs to fully connect to Allston and to Charlestown. It can't just be another Vassar st.

Q5: **What should its relationship be to Vassar Street?**

It would replace Vassar st traffic

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Recreational

Q8: **(Optional) How did you hear about this study?**

Boston cyclists union

#17

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:05:06 PM
Last Modified: Sunday, June 15, 2014 4:06:10 PM
Time Spent: 00:01:04
IP Address: 66.30.7.220

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bike, bus

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes

Q3: **For what kinds of trips?**

commute to work.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Respondent skipped this question

Q5: **What should its relationship be to Vassar Street?**

bike stop light

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

commute

Q8: (Optional) How did you hear about this study?

Respondent skipped this question

#18

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:06:45 PM
Last Modified: Sunday, June 15, 2014 4:14:03 PM
Time Spent: 00:07:18
IP Address: 209.6.69.185

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Brookline St, Mass Ave, Broadway, and Galileo Galilei Way

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Trips passing through the area would be able to avoid Mass Ave which is chaotic all of the time.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Creating a barrier between bikes and larger vehicles and avoiding putting bike lanes to the right of right turning lanes.

Q5: **What should its relationship be to Vassar Street?**

Parallel to Vassar seems to be the most logical place

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

If the path is successful I will use it every M-F as it would replace the Brookline St/Mass Ave part of my commute.

Q8: **(Optional) How did you hear about this study?**

Boston Cyclists Union

#19

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:12:24 PM
Last Modified: Sunday, June 15, 2014 4:17:21 PM
Time Spent: 00:04:57
IP Address: 50.133.232.123

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

cycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes!!!

Q3: **For what kinds of trips?**

commuting, errand running, enjoyment of life not in a car...

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

transitions between the path and the sidewalks/streets for cyclists where applicable must be considered w/o multi phase crossings.

Q5: **What should its relationship be to Vassar Street?** *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

commuting, getting to points in Cambridge, enjoying riding to points in Cambridge and not fearing I'm going to get flattened on River Street

Q8: **(Optional) How did you hear about this study?**

I am a member of the Boston Cyclists Union and heard about it through them as well as Mr Lee Toma

#20

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:19:05 PM
Last Modified: Sunday, June 15, 2014 4:20:29 PM
Time Spent: 00:01:24
IP Address: 24.62.158.129

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Mass Ave & the paths on the Charles

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

practical use, getting into parts of Boston from Somerville

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?	*Respondent skipped this question*
Q5: What should its relationship be to Vassar Street?	*Respondent skipped this question*
Q6: **If the Grand Junction Path was built, would you use it?**	Yes
Q7: For what kinds of trips?	*Respondent skipped this question*
Q8: (Optional) How did you hear about this study?	*Respondent skipped this question*

#21

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:18:46 PM
Last Modified: Sunday, June 15, 2014 4:21:52 PM
Time Spent: 00:03:06
IP Address: 24.34.111.103

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes!

Q3: **For what kinds of trips?**

Between MIT and Longwood Medical campuses, general commutes to/from home and work.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Connection to greater network of paths / cycle-routes.

Q5: **What should its relationship be to Vassar Street?**

Access via Vassar at logical points. Signs and sharrows directing cycling traffic to the path.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

See above

Q8: **(Optional) How did you hear about this study?**

Post on FB

#22

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:23:12 PM
Last Modified: Sunday, June 15, 2014 4:24:25 PM
Time Spent: 00:01:13
IP Address: 50.138.225.95

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Riverfront path, car

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

YES

Q3: **For what kinds of trips?**

work, grocery, commuting

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

safe, separated from car traffic

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

ALL

Q8: **(Optional) How did you hear about this study?**

Facebook

#23

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:23:46 PM
Last Modified: Sunday, June 15, 2014 4:24:48 PM
Time Spent: 00:01:02
IP Address: 173.48.172.66

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Commuting, travelling through the city

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

bike path separate from cars and from walking area.

Q5: **What should its relationship be to Vassar Street?**

no opinion

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

commuting

Q8: **(Optional) How did you hear about this study?**

facebook

#24

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:33:35 PM
Last Modified: Sunday, June 15, 2014 4:37:17 PM
Time Spent: 00:03:42
IP Address: 98.217.173.242

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Any road that is best for riding my bicycle any given day. It varies based on traffic.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Pleasure riding and work commute

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Safety for cyclists and walkers. If possible, separate lanes.

Q5: **What should its relationship be to Vassar Street?**

Parallel but accessible

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Pleasure riding would be great

Q8: **(Optional) How did you hear about this study?**

Facebook

#25

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:36:01 PM
Last Modified: Sunday, June 15, 2014 4:37:33 PM
Time Spent: 00:01:32
IP Address: 198.228.207.97

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Mass ave, always

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Boston to Cambridge, commuting to work, going to yoga, easy access between the sides of the river

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Easy access to minuteman bike path

Q5: What should its relationship be to Vassar Street?

Respondent skipped this question

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: For what kinds of trips?

Respondent skipped this question

Q8: **(Optional) How did you hear about this study?**

Facebook

#26

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:38:16 PM
Last Modified: Sunday, June 15, 2014 4:40:37 PM
Time Spent: 00:02:21
IP Address: 198.228.197.118

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**	Bicycle on mass av and along river paths
Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**	Absolutely
Q3: **For what kinds of trips?**	Commuting, recreation, general transportation
Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**	Safe and isolated from traffic
Q5: **What should its relationship be to Vassar Street?**	Doesn't matter to me
Q6: **If the Grand Junction Path was built, would you use it?**	Yes
Q7: **For what kinds of trips?**	Running and riding to work
Q8: **(Optional) How did you hear about this study?**	Facebook

#27

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:40:19 PM
Last Modified: Sunday, June 15, 2014 4:44:02 PM
Time Spent: 00:03:43
IP Address: 72.93.27.200

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Vassal Street by bike when returning to a Revere

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Commuter and pleasure rides

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Path surface, safety from cars

Q5: **What should its relationship be to Vassar Street?**

Idk

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Commute and pleasure

Q8: **(Optional) How did you hear about this study?**

Facebook

#28

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:53:05 PM
Last Modified: Sunday, June 15, 2014 4:57:42 PM
Time Spent: 00:04:37
IP Address: 71.174.130.237

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Mass Ave., Vassar St., and Mem Drive

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

YES!

Q3: **For what kinds of trips?**

Errands/Recreation

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful? *Respondent skipped this question*

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Errands, Recreation

Q8: **(Optional) How did you hear about this study?**

Boston Cyclists' Union

#29

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:01:10 PM
Last Modified: Sunday, June 15, 2014 5:04:32 PM
Time Spent: 00:03:22
IP Address: 209.6.147.158

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Work and leisure

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Smooth roads, well painted lanes, no car interference riding

Q5: **What should its relationship be to Vassar Street?**

Parallel

Q6: **If the Grand Junction Path was built, would you use it?**	Yes

Q7: **For what kinds of trips?**

Work, exercise, leisure, nightlife

Q8: (Optional) How did you hear about this study?	*Respondent skipped this question*

#30

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:04:52 PM
Last Modified: Sunday, June 15, 2014 5:08:40 PM
Time Spent: 00:03:48
IP Address: 98.216.71.92

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, central square to BU bridge via Pearl st. Take commonwealth if going to allston.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Commute or traveling to Allston

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Easy connection to streets when getting on and off. Plowed and maintained.

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Commuting to boston

Q8: **(Optional) How did you hear about this study?**

Boston Cyclist Union

#31

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:06:56 PM
Last Modified: Sunday, June 15, 2014 5:09:34 PM
Time Spent: 00:02:38
IP Address: 24.60.0.236

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Western Ave (Allston) River st (Cambridge)

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes.

Q3: **For what kinds of trips?**

Trips between Brookline / Allston / Brighton to Cambridge i.e. Central and Kendal Squares.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

extend to Charles River or integrate access with BU Bridge.

Q5: **What should its relationship be to Vassar Street?** *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Social trips, getting to MIT.

Q8: **(Optional) How did you hear about this study?**

Facebook

#32

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 4:59:23 PM
Last Modified: Sunday, June 15, 2014 5:11:21 PM
Time Spent: 00:11:58
IP Address: 50.12.129.52

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, by a lot.

Q3: **For what kinds of trips?**

Work and play

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Connections to other bicycle paths with clear sinage.

Q5: **What should its relationship be to Vassar Street?**

Occasional junctions

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Getting to friends' houses. Going to events at MIT.

Q8: **(Optional) How did you hear about this study?**

Facebook

#33

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:10:02 PM
Last Modified: Sunday, June 15, 2014 5:12:37 PM
Time Spent: 00:02:35
IP Address: 209.6.89.39

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bicycle,
on Vassar St

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes

Q3: **For what kinds of trips?**

all trips. commutes, recreation

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

property rights, access paths of hazardous material travel, light-rail options- 1 or 2

Q5: **What should its relationship be to Vassar Street?**

supplementary

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

commutes, recreation

Q8: **(Optional) How did you hear about this study?**

I work for MIT Office for Campus Planning

#34

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:08:56 PM
Last Modified: Sunday, June 15, 2014 5:14:15 PM
Time Spent: 00:05:19
IP Address: 108.97.20.30

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, car, T

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Local bike trips

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Some way to minimize usage conflicts btw recreational users (slower) & transportation users (faster).

Q5: **What should its relationship be to Vassar Street?**

Along but shielded from?

Q6: **If the Grand Junction Path was built, would you use it?**	Yes

Q7: **For what kinds of trips?**

Bike trips

Q8: (Optional) How did you hear about this study?	*Respondent skipped this question*

#35

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:19:00 PM
Last Modified: Sunday, June 15, 2014 5:21:58 PM
Time Spent: 00:02:58
IP Address: 209.6.91.188

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

I bike via Vassar Street and walk on Portland Street,

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes.

Q3: **For what kinds of trips?**

Commutes

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

It needs to be built in its entirety (not just small pieces)

Q5: **What should its relationship be to Vassar Street?**

An alternative for bikes and peds which eliminates conflicts with motorized vehicles.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Commutes

Q8: **(Optional) How did you hear about this study?**

Respondent skipped this question

#36

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:22:07 PM
Last Modified: Sunday, June 15, 2014 5:23:42 PM
Time Spent: 00:01:35
IP Address: 209.6.228.49

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, walking

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, very much!

Q3: **For what kinds of trips?**

Commuting to work, exercise and general travel

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Unknown? A path?

Q5: **What should its relationship be to Vassar Street?**

A separate, but very close additional path/lane

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Exercise, travel, commuting

Q8: (Optional) How did you hear about this study? *Respondent skipped this question*

#37

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:22:29 PM
Last Modified: Sunday, June 15, 2014 5:29:52 PM
Time Spent: 00:07:23
IP Address: 50.177.133.128

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Most car

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, I would choose to bike if there were paths available

Q3: **For what kinds of trips?**

mostly recreation but some errands as well

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

The connections to it must be well marked and generally safe (bike lanes leading up to it, etc). It would also be great if the path had the right of way at crossing (flashing lights, etc)

Q5: **What should its relationship be to Vassar Street?**

It could be a supplement for bike/pedestrians on Vassar st.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Mostly recreation

Q8: **(Optional) How did you hear about this study?**

Boston cyclists union

#38

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:21:44 PM
Last Modified: Sunday, June 15, 2014 5:31:44 PM
Time Spent: 00:10:00
IP Address: 67.186.135.9

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

I bike on city streets.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Recreational and to and from work.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

A dividing line down the middle and plenty of signs saying, "All Users Keep Right".

Q5: **What should its relationship be to Vassar Street?**

Don't know.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Recreational and to and from work.

Q8: **(Optional) How did you hear about this study?**

Cambridge Bikes Facebook page.

#39

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:35:26 PM
Last Modified: Sunday, June 15, 2014 5:37:04 PM
Time Spent: 00:01:38
IP Address: 50.176.251.82

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bikes, Walking

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Bike for me, auto and train for others

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Well maintained pavement, good lighting for night riding, and a clean surface

Q5: What should its relationship be to Vassar Street?

Respondent skipped this question

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Cycling

Q8: **(Optional) How did you hear about this study?**

Facebook

#40

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:36:58 PM
Last Modified: Sunday, June 15, 2014 5:39:33 PM
Time Spent: 00:02:35
IP Address: 71.232.19.250

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Walking

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, sort of a bus dead zone currently

Q3: **For what kinds of trips?**

Shopping

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Connected to other transport options- bus, train, road

Q5: **What should its relationship be to Vassar Street?**

Not sure

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Shopping/errands

Q8: **(Optional) How did you hear about this study?**

Cambridge Bikes FB group

#41

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:34:34 PM
Last Modified: Sunday, June 15, 2014 5:40:14 PM
Time Spent: 00:05:40
IP Address: 24.61.131.22

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I either walk or bicycle and often use Memorial Drive, Main Street, Massachusetts Avenue, and a hodgepodge of North/South streets.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Certainly. It would provide an enticing route to and from work for thousands of individuals. For many, the barrier to bicycling and walking to work is the discomfort and lack of safe infrastructure. My father, for example, enjoys bicycling but will not bicycle to work because it is not safe or fun. It is a distinctly unpleasant experience, dodging cars, angry drivers, etc.

Q3: For what kinds of trips?

For trips to and from work in Kendall Square, for casual weekend outings to Flour, Brookline Lunch, etc. It would also provide important route of Transit from Allston/Brighton/Kenmore towards Central, Kendall, East Cambridge, and the soon-to-be-developed East Somerville.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

It has to be complete. There can't be any major breaks in the path, or it won't be the thruway that it needs to be. It also has to be well-lit and filled with trees, plants, and public art. It also needs to be built NOW.

Q5: What should its relationship be to Vassar Street?

It should be separate from Vassar Street. Destroying the continuity of the path will lead to a vastly decreased usage. This is empirically proven. Vassar Street cycletracks will supplement the Grand Junction Path. They should never replace it.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Recreational and professional. I would commute to work on it. I would use it for recreational trips, and I would use it to travel and buy groceries, hardware, etc. I would also take it on weekend nights to go out to bars and restaurants with my friends.

Q8: (Optional) How did you hear about this study?

Friends of Grand Junction Path.

#42

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:48:37 PM
Last Modified: Sunday, June 15, 2014 5:51:42 PM
Time Spent: 00:03:05
IP Address: 174.63.0.36

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

BU Bridge
Vassar St.
Albany St.
Broadway

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes

Q3: For what kinds of trips?

River to MIT and Kendall Square

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Access from the Charles River bikepaths
Access from the BU Bridge

Q5: What should its relationship be to Vassar Street?

Multiple connections to Vassar St. between BU Bridge and Main St., but with carefully designed merges

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Trips from the River to MIT to avoid streets

Q8: (Optional) How did you hear about this study?

Cambridge Bikes!

#43

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 5:55:25 PM
Last Modified: Sunday, June 15, 2014 5:57:41 PM
Time Spent: 00:02:16
IP Address: 68.38.168.183

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike commute-Newton to Kendall Sq.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Absolutely

Q3: **For what kinds of trips?**

Walking and cycling

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Clearly marked routes for pedestrians and cyclists.

Q5: **What should its relationship be to Vassar Street?**

Include

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Walking and cycling

Q8: **(Optional) How did you hear about this study?**

Facebook

#44

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 6:03:10 PM
Last Modified: Sunday, June 15, 2014 6:09:25 PM
Time Spent: 00:06:15
IP Address: 209.6.192.68

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

I currently bike down Sydney St. to the BU Bridge on my daily commute to the Longwood Medical area.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, if it were very bike-friendly I consider adjusting my route.

Q3: **For what kinds of trips?**

Daily work commute

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Safe access all the way to the BU Bridge, truly bike friendly path (ideally separate from cars and buffered from exhaust by plants)

Q5: **What should its relationship be to Vassar Street?**

Equal to, not lesser than Vassar

Q6: **If the Grand Junction Path was built, would you use it?**	Yes

Q7: **For what kinds of trips?**

Daily commute

Q8: (Optional) How did you hear about this study?	*Respondent skipped this question*

#45

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 6:05:45 PM
Last Modified: Sunday, June 15, 2014 6:11:09 PM
Time Spent: 00:05:24
IP Address: 24.63.106.159

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes. More people would be comfortable cycling in that area if there were a path.
It might also provide a better route for people in wheelchairs.

Q3: **For what kinds of trips?**

Anything from commuting to recreation.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Wheelchair accessibility, longevity of materials, signage

Q5: **What should its relationship be to Vassar Street?**

Parallel?

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

recreation, commuting, errands

Q8: **(Optional) How did you hear about this study?**

Boston Cyclists Union Facebook page

#46

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 6:13:01 PM
Last Modified: Sunday, June 15, 2014 6:18:38 PM
Time Spent: 00:05:37
IP Address: 66.87.116.57

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I bike around this area on many routes both parallel and perpendicular to the river.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Absolutely

Q3: For what kinds of trips?

I'm coming from Somerville so a safe route towards and across the Charles would be a huge improvement.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

It just needs to be wide enough to safely accommodate bikers, joggers, fast walkers, and slow walkers.

Q5: What should its relationship be to Vassar Street?

Not sure

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Trips between Somerville and boston proper

Q8: (Optional) How did you hear about this study?

BCU

#47

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 6:26:39 PM
Last Modified: Sunday, June 15, 2014 6:30:05 PM
Time Spent: 00:03:26
IP Address: 209.6.199.193

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

car and bike, sometimes T

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes

Q3: **For what kinds of trips?**

going to school, meeting up with friends, running errands

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

safety

Q5: **What should its relationship be to Vassar Street?** *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

going to school, meeting up with friends, running errands, exercising

Q8: **(Optional) How did you hear about this study?**

Facebook

#48

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 6:27:10 PM
Last Modified: Sunday, June 15, 2014 6:30:56 PM
Time Spent: 00:03:46
IP Address: 70.192.2.204

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Charles river Bike path

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes!!!!

Q3: **For what kinds of trips?**

Biking and running. Commuting, errands and excercise.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Road crossings. ESP mass ave and memorial drive
Traffic separation. Avoid dooring or getting thrown under a bus

Q5: **What should its relationship be to Vassar Street?**

Elevated from street --separate from traffic. Two way cycle traffic is fine as long as there isn't a risk of getting pushed into traffic

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Commuting excercise and errands. Bike and running.

Q8: **(Optional) How did you hear about this study?**

Facebook

#49

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 6:30:02 PM
Last Modified: Sunday, June 15, 2014 6:34:31 PM
Time Spent: 00:04:29
IP Address: 24.61.44.163

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

BU bridge
Brookline St
Mass Ave

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

yes

Q3: For what kinds of trips?

commuting: Kendell to Longwood

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

build it and it will be used!

Q5: What should its relationship be to Vassar Street?	*Respondent skipped this question*
Q6: If the Grand Junction Path was built, would you use it?	Yes

Q7: For what kinds of trips?

Commuting

Q8: (Optional) How did you hear about this study?

Facebook

#50

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 6:43:45 PM
Last Modified: Sunday, June 15, 2014 6:45:53 PM
Time Spent: 00:02:08
IP Address: 50.176.60.68

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes

Q3: For what kinds of trips?

Commute and pleasure

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Markings and instructions for each use type

Q5: What should its relationship be to Vassar Street?

Separated clearly and completely

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

Commute by bike to and from work

Q8: (Optional) How did you hear about this study?

Boston bike union

#51

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 6:50:30 PM
Last Modified: Sunday, June 15, 2014 6:51:59 PM
Time Spent: 00:01:29
IP Address: 146.115.112.195

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

T, walk, bicycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, improve mobility and improve safety

Q3: **For what kinds of trips?**

commuting as well as weekend fun

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

separation from traffic, continuity with existing paths

Q5: **What should its relationship be to Vassar Street?**

separate if possible

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

commuting and pleasure

Q8: **(Optional) How did you hear about this study?**

I follow the BCU on Facebook

#52

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 6:53:52 PM
Last Modified: Sunday, June 15, 2014 7:16:19 PM
Time Spent: 00:22:27
IP Address: 96.237.159.90

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike (my own, and Hubway), bus, car, subway, commuter rail, walk.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes!

Q3: **For what kinds of trips?**

Biking and walking. And using the T, then Hubway.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Width: wide enough for bikes to pass rollerbladers and giant strollers, in both directions. Traffic signals at intersections. Clearing it in the winter.

Q5: **What should its relationship be to Vassar Street?**

Separated. Not sure I understand this question.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Commuting. Business meetings. Personal.

Q8: **(Optional) How did you hear about this study?**

Posted on Facebook by Boston cyclists union.

#53

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 7:13:02 PM
Last Modified: Sunday, June 15, 2014 7:16:30 PM
Time Spent: 00:03:28
IP Address: 209.6.95.122

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes

Q3: For what kinds of trips?

Short and long trips, commuting, errands, social trips

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

It needs to be easy to enter at different points.

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Commuting, errands

Q8: (Optional) How did you hear about this study?

Facebook

#54

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 7:41:27 PM
Last Modified: Sunday, June 15, 2014 7:46:41 PM
Time Spent: 00:05:14
IP Address: 24.62.29.116

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Western ave and Mem drive

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Definitely!

Q3: **For what kinds of trips?**

All of the trips!

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?	*Respondent skipped this question*
Q5: What should its relationship be to Vassar Street?	*Respondent skipped this question*
Q6: **If the Grand Junction Path was built, would you use it?**	Yes
Q7: For what kinds of trips?	*Respondent skipped this question*

Q8: **(Optional) How did you hear about this study?**

Facebook- cyclist union

#55

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 7:55:06 PM
Last Modified: Sunday, June 15, 2014 7:58:34 PM
Time Spent: 00:03:28
IP Address: 50.187.218.237

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, run

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Oh heck yes

Q3: **For what kinds of trips?**

Commuting through, meeting people in the area at local businesses, and maybe even working in the area in the future

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Safer paths, better traffic flow, smoother roads, CYCLE TRACK

Q5: What should its relationship be to Vassar Street?	*Respondent skipped this question*
Q6: **If the Grand Junction Path was built, would you use it?**	Yes

Q7: **For what kinds of trips?**

Commuting through, meeting people in the area at local businesses, and maybe even working in the area in the future

Q8: **(Optional) How did you hear about this study?**

Facebook

#56

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 8:00:02 PM
Last Modified: Sunday, June 15, 2014 8:01:41 PM
Time Spent: 00:01:39
IP Address: 24.218.5.154

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

All

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Connections to Boston and Somerville

Q5: **What should its relationship be to Vassar Street?**

Separate but with connections

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Errands

Q8: (Optional) How did you hear about this study? *Respondent skipped this question*

#57

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 8:01:12 PM
Last Modified: Sunday, June 15, 2014 8:05:19 PM
Time Spent: 00:04:07
IP Address: 68.166.236.241

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

I bicycle on Commonwealth Ave, and also ride the subway (B-line)

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Faster, safer bike trips to much of Kendall Square.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Ease of getting on/off. Interactions with road traffic.

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Bike trips to Kendall Square area.

Q8: **(Optional) How did you hear about this study?**

BCU Facebook page

#58

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 8:25:09 PM
Last Modified: Sunday, June 15, 2014 8:29:08 PM
Time Spent: 00:03:59
IP Address: 209.6.130.163

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**	Portland st
Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**	Yes
Q3: **For what kinds of trips?**	Commute
Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**	Snow removal, mass ave crossing, river connection. Maybe making it green corridor ala NYC rail track next to Hudson.
Q5: **What should its relationship be to Vassar Street?**	One could make it bike/ pedestrian promenade w/ vendors (coffee shop for example)
Q6: **If the Grand Junction Path was built, would you use it?**	Yes
Q7: **For what kinds of trips?**	Commute, if promenade on a weekend.
Q8: **(Optional) How did you hear about this study?**	Facebook?

#59

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 8:41:53 PM
Last Modified: Sunday, June 15, 2014 8:44:24 PM
Time Spent: 00:02:31
IP Address: 24.61.185.216

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle. Mass Ave.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes!

Q3: **For what kinds of trips?**

Cycling, walking, linking different modes of transportation

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

How it could be a practical commuting utility rather than simply a pleasurable pathway

Q5: **What should its relationship be to Vassar Street?**

Cordial ;)

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Commuting

Q8: **(Optional) How did you hear about this study?**

Facebook

#60

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 9:06:26 PM
Last Modified: Sunday, June 15, 2014 9:08:35 PM
Time Spent: 00:02:09
IP Address: 209.6.52.21

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

car foot and bike

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Certainly - there a lots of people using the Mass Ave Bridge then turning west who could use this route instead.

Q3: **For what kinds of trips?**

Somerville to Longwood

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?	*Respondent skipped this question*
Q5: What should its relationship be to Vassar Street?	*Respondent skipped this question*
Q6: **If the Grand Junction Path was built, would you use it?**	Yes

Q7: **For what kinds of trips?**

To go to work (Longwood)

Q8: **(Optional) How did you hear about this study?**

BCU FB post.

#61

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 9:21:46 PM
Last Modified: Sunday, June 15, 2014 9:26:53 PM
Time Spent: 00:05:07
IP Address: 76.24.25.67

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Vassar Street cycletrack, Mass Ave bike lane, neighborhood streets through Cambridgeport, BU Bridge.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes!

Q3: For what kinds of trips?

Business commuting, recreation, leisure, and shopping. Especially bicycle commute connectivity.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Carefully design the intersections with Mass Ave, Gore Street, and other at-grade street intersections using design elements such as bicycle signals, extensive signage to alert motorists, and surface treatments like pavers in the crossing to improve its visibility to motorists. I'm much more worried about conflicts with motorists and truckers than I am about the occasional freight trains on the Grand Junction rail line.

Q5: What should its relationship be to Vassar Street?

Make sure that there is signage on each route informing cyclists of the adjacent route, i.e., signs on Vassar Street telling cyclists of the nearby Grand Junction Path (and its connection to the Somerville Community Path). Motorists are informed about other routes that are nearby or coming up down the ride. Why not cyclists as well? "Somerville Community Path --> 2 miles ahead".

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

Everything. Traveling to business/scientific meetings, shopping and visiting friends in Boston, and recreation/exercise. I would also bring guests and visitors down the path when they are visiting Boston. It would contribute to the appeal of the corridor.

Q8: (Optional) How did you hear about this study?

Boston Cyclists Union

#62

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 11:09:59 PM
Last Modified: Sunday, June 15, 2014 11:20:11 PM
Time Spent: 00:10:12
IP Address: 50.133.232.95

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle predominantly (weekly), then walking (monthly), with an occasional car (few times a year).

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, as a visible first step to (a) completing the larger corridor from Boston to Somerville, and (b) promoting better use of rail corridors for other means of transportation.

Q3: **For what kinds of trips?**

Quickly traversing campus on bicycle without crossing lots of driveways and roads. Eventually making it easier to get into Boston / Brighton / Brookline which are poorly served by the BU Bridge alone.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

MIT needs to use its leverage to get the connecting portions completed. Push BU to get behind the Boston side of it. Get Cambridge and Somerville to work together.

Q5: **What should its relationship be to Vassar Street?**

Vassar speeds should be much more restricted. Think of the Rail Corridor as the "express" train and Vassar Street's cycle tracks as the "local."

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Personal and business, from Brookline and Brighton to Cambridge and Somerville.

Q8: (Optional) How did you hear about this study?

Respondent skipped this question

#63

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 15, 2014 11:19:05 PM
Last Modified: Sunday, June 15, 2014 11:52:58 PM
Time Spent: 00:33:53
IP Address: 72.70.83.190

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

In that area I'm typically cycling or walking. Sometimes I'm on a bus or in a car.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Any kind of cycling walking or running - commuting, recreational, exercising.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Keep it lit at night, keep it cleared in the winter, keep the paving in good shape so cyclists don't need a GD mountain bike to use it, lots of entrances and exits (better yet no fences period)

Q5: **What should its relationship be to Vassar Street?**

This path could relieve traffic on Vassar (pedestrians and cyclists)

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

I could bike between e cambridge and watertown, e cambridge and brookline, and it would be way quicker

Q8: **(Optional) How did you hear about this study?**

Boston Cyclists Union facebook status

#64

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 4:56:19 AM
Last Modified: Monday, June 16, 2014 5:02:50 AM
Time Spent: 00:06:31
IP Address: 76.119.235.185

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bicycle. I currently take Albany Street. Or Pearl/Brookline Streets depending on the direction. Pearl is not ideal since it's got no bike lane and has a million potholes. Brookline is pretty good, but not direct to go from BU bridge to Kendall. Vassar Street is not connected to the rest of the western side of Cambridge except through Mass Ave or at the rotary near BU bridge - it's not a convenient road to take even though the bike lane there is very good.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

YES!

Q3: For what kinds of trips?

Bicycle

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Physically separated bike lane from pedestrians and cars. Clear signs and road markings to cars know bikes will be crossing (eg on Mass Ave). Smooth connection to other cycle networks (eg Somerville path, along Memorial drive, along storrow drive). If the cyclist has to get off the bike, walk over a bridge or cross a busy scary intersection as a pedestrian, this is not ideal.

Q5: What should its relationship be to Vassar Street?

Cross-connections. An alternate north-south path.

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

commute and pleasure.

Q8: (Optional) How did you hear about this study?

facebook

#65

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 5:27:24 AM
Last Modified: Monday, June 16, 2014 5:31:13 AM
Time Spent: 00:03:49
IP Address: 24.218.56.173

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Vassar Street. Scary, but direct.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

probably, and it would probably cut down on negative interactions with cars and delivery trucks

Q3: **For what kinds of trips?**

commuting, etc

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Points where the path intersects with traffic again and peds would need to be carefully marked as crossings and/or have traffic lights.

Q5: **What should its relationship be to Vassar Street?**

I think it would be useful as a bicycle "relief route" - a direct way to connect those areas without having to further bog down traffic on Vassar street.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

commuting

Q8: **(Optional) How did you hear about this study?**

Facebook - boston cyclists union

#66

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 5:37:44 AM
Last Modified: Monday, June 16, 2014 5:42:59 AM
Time Spent: 00:05:15
IP Address: 198.228.197.104

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Mass ave, memorial drive, brookline dr, elliot st

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Absolutely

Q3: For what kinds of trips?

Allston - East Cambridge, East Somerville, Kendall, Union Sq.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Paving, Track Removal, crossing lights and lane considerations

Q5: What should its relationship be to Vassar Street?

I dont know where vassar st it

Q6: If the Grand Junction Path was built, would you use it? No

Q7: For what kinds of trips?

Crosstown, avoidibg mass ave, easy allston-points northeast of boston.

Q8: (Optional) How did you hear about this study?

Facebook

#67

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 5:51:16 AM
Last Modified: Monday, June 16, 2014 6:06:53 AM
Time Spent: 00:15:37
IP Address: 71.233.244.163

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle on Vassar Street

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Ride from Cambridgeport to Boston. I don't have a car.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Many access points to get on and off where you choose.

Q5: **What should its relationship be to Vassar Street?**

GJC : Vassar Street = interstate : local road

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Bicycling around the city

Q8: **(Optional) How did you hear about this study?**

Facebook

#68

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 6:03:33 AM
Last Modified: Monday, June 16, 2014 6:07:12 AM
Time Spent: 00:03:39
IP Address: 204.167.92.26

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, T, walk

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, absolutely. A low-stress connection is needed for this corridor in Cambridge.

Q3: **For what kinds of trips?**

Bike, walk, T access

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Continuity, accessibility

Q5: **What should its relationship be to Vassar Street?**

Both corridors should be made available. When planning for cars, we don't worry about the creation of a second road supplanting the role of another in the transportation network, nor do we consider two roads in the same area headed roughly in the same direction to be redundant. We should move past thinking of bike infrastructure in these ways.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Trips in the region to access work/entertainment

Q8: (Optional) How did you hear about this study?

Respondent skipped this question

#69

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 6:16:40 AM
Last Modified: Monday, June 16, 2014 6:18:20 AM
Time Spent: 00:01:40
IP Address: 132.183.4.6

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bike

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

definitely

Q3: **For what kinds of trips?**

moving bikes to a multi-use path is safer for the cyclists and reduces congestion for motor traffic.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

dedicated cycle tracks

Q5: **What should its relationship be to Vassar Street?**

not sure

Q6: **If the Grand Junction Path was built, would you use it?** Yes

---

Q7: **For what kinds of trips?**

commute

Q8: (Optional) How did you hear about this study? *Respondent skipped this question*

#70

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 6:19:22 AM
Last Modified: Monday, June 16, 2014 6:22:40 AM
Time Spent: 00:03:18
IP Address: 71.232.79.232

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike, walk, bus

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Absolutely

Q3: For what kinds of trips?

Getting from Allston to Central Square or Kendall without having to take god-awful Cambridge Street

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Connecting it to the Mass Pike straightening project/Allston

Q5: What should its relationship be to Vassar Street?

Vassar Street could function more as a "slow-lane" for bikes, for trips in the immediate MIT area. Grand Junction would allow for faster-paced travel with fewer intersections/interruptions

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

Shopping, going to concerts, and exploring Cambridge, Boston, and neighboring cities.

Q8: (Optional) How did you hear about this study?

BCU Facebook status

#71

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 6:36:03 AM
Last Modified: Monday, June 16, 2014 6:38:24 AM
Time Spent: 00:02:21
IP Address: 70.192.15.126

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Vassar, mass ave

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

YES!

Q3: **For what kinds of trips?**

Bike, walk

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Safe Intersections with streets.

Q5: **What should its relationship be to Vassar Street?**

Exclusive

Q6: **If the Grand Junction Path was built, would you use it?**

Respondent skipped this question

Q7: **For what kinds of trips?**

Biking to Kendall from JP/ Roxbury.

Q8: **(Optional) How did you hear about this study?**

Facebook

#72

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 6:44:43 AM
Last Modified: Monday, June 16, 2014 6:46:13 AM
Time Spent: 00:01:30
IP Address: 50.198.125.189

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bike

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

YES!

Q3: **For what kinds of trips?**

commuting, shopping, recreation, and to take new riders out into the city

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

cross the charles river to connect to the Dudley White path. Safe cosigns at streets/RR, and have it be wide enough for two-way all users.

Q5: **What should its relationship be to Vassar Street?**

could connect with Vassar, but should be it's own independent pathway.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

commuting, shopping, recreation, and to take new riders out into the city

Q8: (Optional) How did you hear about this study?

Respondent skipped this question

#73

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 6:58:01 AM
Last Modified: Monday, June 16, 2014 7:00:17 AM
Time Spent: 00:02:16
IP Address: 173.9.32.41

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike / MBTA

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Perhaps

Q3: For what kinds of trips?

leisure / connection to the esplanade

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

safety / connections to the trail from esplanade, kendall, and surrounding streets

Q5: What should its relationship be to Vassar Street?

detached

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

leisure

Q8: (Optional) How did you hear about this study?

facebook

#74

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 8:01:37 AM
Last Modified: Monday, June 16, 2014 8:03:03 AM
Time Spent: 00:01:26
IP Address: 98.217.149.160

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Respondent skipped this question

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

YES!

Q3: For what kinds of trips?

Commuting to work & for pleasure.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Respondent skipped this question

Q5: What should its relationship be to Vassar Street?

Respondent skipped this question

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

Commuting to work & for pleasure.

Q8: (Optional) How did you hear about this study?

BCU

#75

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 8:04:11 AM
Last Modified: Monday, June 16, 2014 8:14:50 AM
Time Spent: 00:10:39
IP Address: 65.202.132.210

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Multi-use meaning shared by bikes and pedestrians? Sure, as long as there are clear marking for use.

Q3: **For what kinds of trips?**

Travel east and west. I don't have anything to stop for on Vassar.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Separating the bike travel lane and from the sidewalk. Make it all one level, not up and down the curb.

Q5: **What should its relationship be to Vassar Street?**

separated lane by paint, with a buffer, when possible.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Travel through to BU bridge and connect to paths heading to Minuteman, once constructed.

Q8: **(Optional) How did you hear about this study?**

Cambridge Bikes!, Facebook - Minuteman path, MIT cyclists

#76

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 7:56:58 AM
Last Modified: Monday, June 16, 2014 8:39:13 AM
Time Spent: 00:42:15
IP Address: 66.109.43.11

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Currently on regular bicycle friendly streets in the area.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes, it would provide a means for people on bike and on foot to safely traverse the area.

Q3: For what kinds of trips?

Cycling to/from work and school as well as recreational trips.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

How well it connects with existing infrastructure.

Q5: What should its relationship be to Vassar Street?

It should be a separate path if possible.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Cycling to/from work and school as well as recreational trips.

Q8: (Optional) How did you hear about this study?

Facebook post by the Boston Cyclists Union.

#77

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 8:36:25 AM
Last Modified: Monday, June 16, 2014 8:40:13 AM
Time Spent: 00:03:48
IP Address: 204.138.44.18

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Primarily Vassar St and Mass Ave

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, overall creating an interconnected network of multi-use cities is a wonderful improvement in mobility and increase in amenities in this and surrounding cities/towns.

Q3: **For what kinds of trips?**

Both commuting and recreational.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Good connectivity with other trails. Grand Junction is not as critical as, say, the GLX path because there are already good facilities on Vassar Street. However, intersections are still tricky and this path should feed into the wider network of paths.

Q5: **What should its relationship be to Vassar Street?**

Different facilities for different cyclists and different OD pairs.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Probably more recreational since this is not currently a commuting path for me.

Q8: **(Optional) How did you hear about this study?**

Cambridge Bike Committee mailing list

#78

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 8:23:48 AM
Last Modified: Monday, June 16, 2014 9:10:26 AM
Time Spent: 00:46:38
IP Address: 75.144.207.185

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I travel from Somerville through Kendall Square, and over the BU bridge to access the Allston area.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

It would greatly improve city connectivity. Many people would use this for commuting, both from Brookline to Kendall and from Cambridge to BU, Fenway, and the Longwood Medical Area. It would also make it much easier for students from Fenway area and BU to interact with MIT students.

Q3: For what kinds of trips?

Commuting, social, recreational connection to Somerville Community Bike Path and the Esplanade.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Five different organizations own land parcels in this project; it is critical that they form a committee to address and develop a cohesive plan and initiate its design and construction in tandem. Also, the BU bridge crossing is BIG IF. A back-up plan needs to be evaluated, perhaps taking space/making improvements to the currently used bridge in addition to plans for the inactive underpass bridge. This plan should have connection to the I-90 straightening as well, to ensure network connectivity in the future.

Q5: What should its relationship be to Vassar Street?

It runs parallel, but they are separate systems. I would not recommend funneling cyclists off the Junction Path onto Vassar.

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

All of the kinds mentioned above! It would provide critical connection between Cambridge and Allston, two areas that would greatly benefit from a shared community and receive an economic boost.

Q8: (Optional) How did you hear about this study?

I work in transportation.

#79

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 9:10:54 AM
Last Modified: Monday, June 16, 2014 9:14:21 AM
Time Spent: 00:03:27
IP Address: 128.197.225.93

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle, BU Bridge, Mass Ave, Brookline Street, Memorial Drive, Broadway

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

YES

Q3: **For what kinds of trips?**

Commuting, recreation, errands, etc. All kinds.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Respondent skipped this question

Q5: **What should its relationship be to Vassar Street?**

Intermittent connections, otherwise self-contained?

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Recreational

Q8: **(Optional) How did you hear about this study?**

Boston Bicycle Union

#80

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 9:35:26 AM
Last Modified: Monday, June 16, 2014 9:37:07 AM
Time Spent: 00:01:41
IP Address: 199.47.79.34

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike, foot, T

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

YES

Q3: For what kinds of trips?

Bike, foot

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Cycle track so bikes are separate from cars with no danger of being "doored"

Q5: What should its relationship be to Vassar Street?

Path should be away from car traffic. Separate bikes and pedestrians if possible.

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

bike trips

Q8: (Optional) How did you hear about this study?

Boston Cyclists Union

#81

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 11:32:33 AM
Last Modified: Monday, June 16, 2014 11:33:04 AM
Time Spent: 00:00:31
IP Address: 92.226.25.149

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bike and car

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

maybe

Q3: For what kinds of trips? *Respondent skipped this question*

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Who is conducting this survey? I feel like every year or two someone stops me on my bike on Vassar street and asks me to tell them about my experiences biking in the area. My broken record priority is getting that one treacherous intersection at Vassar and Mass Ave safetied-up for bikers.

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: For what kinds of trips? *Respondent skipped this question*

Q8: **(Optional) How did you hear about this study?**

facebook

#82

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 12:22:01 PM
Last Modified: Monday, June 16, 2014 12:23:25 PM
Time Spent: 00:01:24
IP Address: 64.192.133.129

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bike, walk

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

for biking and walking, not rail or car

Q3: For what kinds of trips? *Respondent skipped this question*

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

how it integrates with surrounding neighborhood and impact on noise levels and congestion

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

biking, walking

Q8: **(Optional) How did you hear about this study?**

cambridge chronicle

#83

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 12:17:19 PM
Last Modified: Monday, June 16, 2014 12:26:13 PM
Time Spent: 00:08:54
IP Address: 192.80.70.50

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

The modes and routes I used to travel around the Grand Junction Corridor area was taking the EzrRide Shuttle.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, indeed the Grand Junction Corridor improve mobility in this area to add more path lights during the night time.

Q3: **For what kinds of trips?**

The kinds of trips going around the Boston & Cambridge area example adding a Commuter Rail Stop in the near future.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

The key factors that I needed to be addressed for the Grand Junction Path to be successful to more community around the area.

Q5: **What should its relationship be to Vassar Street?**

The relationship be to Vassar Street is to have more business, jobs, hotel, & homes.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

The kinds of trips go around the world.

Q8: **(Optional) How did you hear about this study?**

I heard it from the Cambridge Chronicle online.

#84

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 12:32:57 PM
Last Modified: Monday, June 16, 2014 12:36:00 PM
Time Spent: 00:03:03
IP Address: 209.6.196.137

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Walk. bicycle, bus, car.yes

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

yes.

Q3: For what kinds of trips?

all kinds.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Coexist well with existing railbeds and sidings.

Q5: What should its relationship be to Vassar Street?

It should use the existing bike lanes on Vassar, and only use the RR right-of-way west and east of Vassar.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

when ever it was close to my path of travel.

Q8: (Optional) How did you hear about this study?

Facebook.

#85

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 8:16:03 AM
Last Modified: Monday, June 16, 2014 12:37:06 PM
Time Spent: 04:21:03
IP Address: 192.80.65.231

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, walk, T. I go everywhere, but mostly on routes where there is a bike path or cycletrack.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes, greatly! it is otherwise a hard area to navigate. With many busy streets and a very busy rotary to cross.

Q3: **For what kinds of trips?**

trips from cambridge to boston, trips to the minuteman trail from the galleria mall area/kendall MIT. Trips westward on the greenline extension route.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

safety, make it multifunction but have pedestrians walk either separated from bikes or in the opposite direction from the flow of bikes so they are safe.

Q5: **What should its relationship be to Vassar Street?**

It can utilize the existing cycle tracks on Vassar street, but they need to be revitalized a bit and have more signs so people do not walk in them.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Trips to Boston/Allston/Brighton, east cambridge. To the office near the Cambridgeside galleria. Connection to the greenline extension

Q8: **(Optional) How did you hear about this study?**

Facebook/bike union

#86

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 12:39:59 PM
Last Modified: Monday, June 16, 2014 12:44:00 PM
Time Spent: 00:04:01
IP Address: 72.11.223.66

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Car via Memorial Drive and/or Vassar St
Foot/bike via surrounding streets

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes - but I hold on to the fantasy of the Urban Ring better utilizing this corridor.

Q3: For what kinds of trips?

Bike trips from Somerville and Wellington-Harrington to MIT and the BU Bridge. When I was an MIT grad student living in Somerville, I often wished for it.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Regional linkages

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: If the Grand Junction Path was built, would you use it? No

Q7: For what kinds of trips? *Respondent skipped this question*

Q8: (Optional) How did you hear about this study?

Cambridge Chronicle

#87

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 2:10:40 PM
Last Modified: Monday, June 16, 2014 2:13:57 PM
Time Spent: 00:03:17
IP Address: 86.62.180.62

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, foot

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes definitely.

Q3: **For what kinds of trips?**

Getting from Union to Allston or Kendall
for farmers markets, shopping, entertainment, bringing kids to art classes and to somerville festivals (fluff festival, beardfest, etc), visiting friends in Somerville

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Educating drivers of cars (and trucks) about how much space bikers need, and installing protected bike lanes (like the one on Vassar St) as much as possible.

Q5: **What should its relationship be to Vassar Street?**

Since Vassar St has a bike path on it already, it would make to include it. However the intersection of Vassar and Mass Ave is one of the most dangerous intersections in Cambridge for bicyclists, as the Globe recently documented. Visibility and regulation in that intersection would have to be improved. I regularly bike from mid-Cambridge to Symphony area and I avoid that intersection at busy times.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

See #3

Q8: (Optional) How did you hear about this study?

Respondent skipped this question

#88

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 2:10:02 PM
Last Modified: Monday, June 16, 2014 2:15:02 PM
Time Spent: 00:05:00
IP Address: 71.235.29.176

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Walking and biking are most common. Occasionally drive on Albany and Vassar.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

I'm not sure. But if a solution involves more noise, pollution and traffic in the Cambridgeport neighborhood, i would not favor the proposal.

Q3: **For what kinds of trips?**

Accessing Central Sq and Kendall Sq.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Noise, pollution and traffic controls in place so that the residential neighborhood of lower Cambridgeport is not adversely affected.

Q5: **What should its relationship be to Vassar Street?**

Not sure. Let's see what the designers suggest.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Biking! Fast access to Kendall.

Q8: **(Optional) How did you hear about this study?**

An article on WickedLocal.com

#89

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 3:00:32 PM
Last Modified: Monday, June 16, 2014 3:03:30 PM
Time Spent: 00:02:58
IP Address: 140.247.175.135

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Biking

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes

Q3: **For what kinds of trips?**

Home-work and Home - leisure trips

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Improvement of bike area in Cambridge most important, safer option to use Mass ave or alternative route from Harvard Bridge to Central square and Harvard square. Mass ave preferably should have a separate bike lane. just like the one in progress on western ave

Q5: **What should its relationship be to Vassar Street?**

separate

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Home - work

Q8: **(Optional) How did you hear about this study?**

facebook

#90

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 4:11:23 PM
Last Modified: Monday, June 16, 2014 4:21:41 PM
Time Spent: 00:10:18
IP Address: 209.6.245.89

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I go over the BU bridge from and to either essex or carlton and from/to brookline and granite street - this is my daily route to work - mostly by bike, sometimes by car.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

YES!!

Q3: For what kinds of trips?

bicycle, walking

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

off-street connection to comm ave and the emerald necklace paths to the south (through brookline) and to the somerville community path.

Q5: What should its relationship be to Vassar Street?

separate

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

crossing the river to cambridge daily for work, and recreational access to the somerville community path and minute man trail and even the north end and the science museum! Along with the casey arborway project, suddenly there's potential to connect the minute man to the emerald necklace. I am very excited about this project.

Q8: (Optional) How did you hear about this study? *Respondent skipped this question*

#91

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 5:09:34 PM
Last Modified: Monday, June 16, 2014 5:12:30 PM
Time Spent: 00:02:56
IP Address: 24.63.209.27

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bicycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

For many. As an avid commuter and strong cyclist I feel able to move through the city without much infrastructure. However, to make the city accessible to the average cyclist, I think this would be very helpful.

Q3: **For what kinds of trips?**

Commutes, neighborhood jaunts, families with kids, students getting to class.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

City relationship

Q5: **What should its relationship be to Vassar Street?**

As integrated with the city as possible so that it can expand beyond the confines of campus.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Biking across the city, within cambridge, getting to my partner's house, getting to school, shopping.

Q8: **(Optional) How did you hear about this study?**

Boston cyclists union.

#92

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 5:25:42 PM
Last Modified: Monday, June 16, 2014 5:28:38 PM
Time Spent: 00:02:56
IP Address: 209.6.225.207

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

MBTA, walking, car, motorcycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Commuting and interoffice walking.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

It is important that mass transit not be sacrificed for a multi-use path. Double tracked rail service or the Urban Ring is much more important than the path.

Q5: **What should its relationship be to Vassar Street?**

As designed Vassar Street fails as a bike route. The cycle-track is at grade with pedestrians creating numerous bike/pedestrian conflicts. The multi-use path would hopefully relieve some of these.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Commuting and interoffice walking.

Q8: **(Optional) How did you hear about this study?**

Cambridge Chronicle and Tab

#93

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 5:56:50 PM
Last Modified: Monday, June 16, 2014 5:59:58 PM
Time Spent: 00:03:08
IP Address: 24.147.150.217

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Walk, bike car

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

OH YES!

Q3: **For what kinds of trips?**

Allston to Central/Kendall

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Adequate space for multi use

Q5: **What should its relationship be to Vassar Street?**

Marked "exits" or mini cross street paths

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Errands, shopping, meal and music trips

Q8: **(Optional) How did you hear about this study?**

BCU

#94

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 6:33:21 PM
Last Modified: Monday, June 16, 2014 6:36:00 PM
Time Spent: 00:02:39
IP Address: 50.133.223.133

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Biking and EZ ride shuttle when I can't bike.
Brookline, Pacific, Main, Broadway streets.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes!

Q3: For what kinds of trips?

Bike trips.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Not sure.

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Bike trips

Q8: (Optional) How did you hear about this study?

my husband sent me the link

#95

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 7:00:47 PM
Last Modified: Monday, June 16, 2014 7:02:05 PM
Time Spent: 00:01:18
IP Address: 71.184.179.161

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, foot

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Pedestrians and cyclists

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Easy connections and clear signage at crossings with cars

Q5: **What should its relationship be to Vassar Street?**

Separate from the street but easily accessible from Vassar

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

cycling

Q8: (Optional) How did you hear about this study?

Respondent skipped this question

#96

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 7:24:49 PM
Last Modified: Monday, June 16, 2014 7:29:08 PM
Time Spent: 00:04:19
IP Address: 24.60.2.181

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike, mostly Broadway and Cambridge St, or Pearl St. If I happen to be in Kendall and need to get to BU I take Vassar but it's rare.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Absolutely. The sidewalk along the river is already in terrible shape and overcrowded, and so an alternative would be much appreciated.

Q3: For what kinds of trips?

Anything, really. Hubway from MIT to BU, I know a lot of starrtup folk who live in Allston and commute to Kendall.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Enough space, and bike signals would be amazing.

Q5: What should its relationship be to Vassar Street?

I think the current separated bike lane could be reused, given how tight the rail right-of-way is. The current version isn't too bad. (Gated crossings on the various parking lots would be a nice touch, though.)

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Recreational, and business. Social as well.

Q8: (Optional) How did you hear about this study?

Facebook

#97

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 7:35:43 PM
Last Modified: Monday, June 16, 2014 7:43:55 PM
Time Spent: 00:08:12
IP Address: 24.61.184.136

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Albany street mostly

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Absolutely

Q3: **For what kinds of trips?**

Grocery trips, commuting to work, cross town to get to Boston or Somerville etc

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Easy to get on and off (access) and we'll maintained. Clearly marked sections for cycling and pedestrian traffic.

Q5: **What should its relationship be to Vassar Street?**

Connections at access points

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Work and family trips

Q8: **(Optional) How did you hear about this study?**

Facebook

#98

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 16, 2014 7:55:15 PM
Last Modified: Monday, June 16, 2014 7:58:07 PM
Time Spent: 00:02:52
IP Address: 76.19.65.68

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

I almost always bike, and I would probably take the Charles River path.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

YES!

Q3: **For what kinds of trips?**

All? I mainly bike everywhere.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Ensuring there is adequate space for all users and areas are well designed. i.e. provide an attractive and sensible area for pedestrians so they don't take over the cycling areas and ditto for cyclists.

Q5: **What should its relationship be to Vassar Street?**

Converting to and from Vassar should be easy and well planned out.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

All heading towards Allston/Brighton

Q8: **(Optional) How did you hear about this study?**

Facebook

#99

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 17, 2014 2:55:03 AM
Last Modified: Tuesday, June 17, 2014 2:59:59 AM
Time Spent: 00:04:56
IP Address: 24.61.10.196

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycling on Vassar, Albany, the DCR bikeway on the Charles, Sydney, and back ways in Cambridgeport.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Absolutely

Q3: **For what kinds of trips?**

Trips to shopping areas on either ends, as well as through trips from the Somerville area to the BU area of Boston.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Interconnection with the existing DCR bikeway and also the proposed green line extension

Q5: **What should its relationship be to Vassar Street?**

If Vassar is incorporated into this passage, it will be critical to interconnect it in a safe and easily traversed manner.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Trips where I need to get to neighborhoods on either end of the path or on points along the path.

Q8: **(Optional) How did you hear about this study?**

reddit

#100

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 17, 2014 3:55:06 AM
Last Modified: Tuesday, June 17, 2014 3:57:44 AM
Time Spent: 00:02:38
IP Address: 174.62.237.238

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

mass ave over bridge to comm ave.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes and safety.

Q3: **For what kinds of trips?**

errands, work.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

well lit, pavement maintenance, marked lanes so bikes and people don't collide

Q5: **What should its relationship be to Vassar Street?**

physical separation so that cars don't park, or drift into it.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

errands, work,

Q8: **(Optional) How did you hear about this study?**

facebook

#101

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 17, 2014 10:03:44 AM
Last Modified: Tuesday, June 17, 2014 10:07:07 AM
Time Spent: 00:03:23
IP Address: 131.142.161.245

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Walk, bike and drive.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes. Would reduce car traffic and provide quicker transportation

Q3: **For what kinds of trips?**

Visiting MIT locations, the river and recreational trips

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

How wide the path should be. Ensuring the path is continuous and handles issues like street crossings.

Q5: **What should its relationship be to Vassar Street?**

Provides another option and also should have outlets to Vassar.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Visiting MIT locations, the river and recreational trips

Q8: **(Optional) How did you hear about this study?**

Respondent skipped this question

#102

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 17, 2014 10:52:17 AM
Last Modified: Tuesday, June 17, 2014 10:58:42 AM
Time Spent: 00:06:25
IP Address: 134.174.21.158

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes. It would improve access from towns to the north to Cambridge, the Charles and beyond.

Q3: **For what kinds of trips?**

Commuting to the LMA.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Good connectivity to other paths at its beginning and end

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Commuting

Q8: **(Optional) How did you hear about this study?**

Friends of the Grand Junction Facebook page

#103

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 17, 2014 1:11:22 PM
Last Modified: Tuesday, June 17, 2014 1:17:09 PM
Time Spent: 00:05:47
IP Address: 66.181.92.2

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Foot, bus, MBTA, car

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

if there's some way that it wouldn't duplicate the nearly parallel and very close bicycle and walking paths on Vassar St., yes. If multi-use includes some sort of transit, that would be great

Q3: **For what kinds of trips?**

its like allston, brighton, and brookline are so far away but they're not! its just that there aren't good & safe transit or bicycle connections

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

convenience. safety.

Q5: **What should its relationship be to Vassar Street?**

connected at every opportunity. so many people use the new path next to the ROTC building, I think that's a sign of how much need for access there is

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

assuming "path" doesn't include transit, I'd still use it for walking the dog and for walking to those parts of MIT and the river that are reached faster and more pleasantly off existing roads

Q8: **(Optional) How did you hear about this study?**

chronical article

#104

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 17, 2014 2:24:18 PM
Last Modified: Tuesday, June 17, 2014 2:30:04 PM
Time Spent: 00:05:46
IP Address: 66.181.92.2

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

bicycle primarily, but also transit and walking and occasionally driving

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

YES!!

Q3: For what kinds of trips?

primarily for bicycle trips, it would allow shorter, more direct trips with much less stress and danger and delay due to vehicle traffic

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Bare minimum is to connect all the way to Charles River path and to Community Path in Somerville. Even better is to continue over Charles River and connect to a "People's Pike" proposed new path in Allston

Q5: What should its relationship be to Vassar Street?

If the distance is the same as Vassar St cycletrack, it is redundant. Must go further and connect all the way to nearby existing paths to be of significant added value.

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

visiting friends who live in East Cambridge, going to restaurants in Kendall Square, movies at Kendall Square cinema

Q8: (Optional) How did you hear about this study?

press

#105

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 17, 2014 3:10:22 PM
Last Modified: Tuesday, June 17, 2014 4:56:35 PM
Time Spent: 01:46:13
IP Address: 209.6.38.15

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Walking, biking and driving

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Absolutely.

Q3: **For what kinds of trips?**

Walking and biking

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

I'm not sure

Q5: **What should its relationship be to Vassar Street?**

Offset.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Walking and biking.

Q8: (Optional) How did you hear about this study? *Respondent skipped this question*

#106

COMPLETE

Collector: New Web Link (Web Link)
Started: Wednesday, June 18, 2014 6:03:15 AM
Last Modified: Wednesday, June 18, 2014 6:07:54 AM
Time Spent: 00:04:39
IP Address: 209.6.2.102

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Primarily, I travel by bus. Sometimes by bike.
Bus routes are too long, and bike routes are not safe.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

absolutely! the connection to MIT from the South (i.e. Allston) would be greatly improved

Q3: **For what kinds of trips?**

every trip could be a bicycle/walk trip with the right facilities.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

determining whether the other portions of the path will be viable, though even a partial construction is better than nothing.

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

work and social

Q8: **(Optional) How did you hear about this study?**

Grand Junction meeting

#107

COMPLETE

Collector: New Web Link (Web Link)
Started: Wednesday, June 18, 2014 10:09:14 AM
Last Modified: Wednesday, June 18, 2014 10:12:01 AM
Time Spent: 00:02:47
IP Address: 65.215.1.13

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

By bike, Vassar St. (near MIT oval) to Ames St. & Broadway.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, if it made crossing Mass Ave. easier.

Q3: **For what kinds of trips?**

All, especially daily commuting.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Crossing major (multilane) streets

Q5: **What should its relationship be to Vassar Street?**

Parallel? Not sure what you're asking here.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

As needed (2-3 times per week, including commutes from BU and/or MIT)

Q8: **(Optional) How did you hear about this study?**

Cambridge Bicycle Report, 18 June, via e-mail.

#108

COMPLETE

Collector: New Web Link (Web Link)
Started: Wednesday, June 18, 2014 12:15:46 PM
Last Modified: Wednesday, June 18, 2014 1:28:14 PM
Time Spent: 01:12:28
IP Address: 204.167.92.26

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bike, walking, car

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes

Q3: **For what kinds of trips?**

bike trips using the BU Bridge, trips to Kendall square.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

wide enough to accommodate many modes, comfortable with shade and greenery. easy access points

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

bike trips using the BU Bridge, trips to Kendall square

Q8: **(Optional) How did you hear about this study?**

Cambridge Bike newsletter

#109

COMPLETE

Collector: New Web Link (Web Link)
Started: Wednesday, June 18, 2014 4:26:06 PM
Last Modified: Wednesday, June 18, 2014 4:28:23 PM
Time Spent: 00:02:17
IP Address: 76.127.164.118

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Walk, drive

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

No

Q3: For what kinds of trips? *Respondent skipped this question*

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Railways are scarce. Use for public transport instead of a pathway.

Q5: What should its relationship be to Vassar Street?

Vassar street is sufficient for pedestrian and bike use.

Q6: If the Grand Junction Path was built, would you use it? No

Q7: For what kinds of trips? *Respondent skipped this question*

Q8: (Optional) How did you hear about this study? *Respondent skipped this question*

#110

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 5:00:11 AM
Last Modified: Thursday, June 19, 2014 5:01:13 AM
Time Spent: 00:01:02
IP Address: 204.167.92.26

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike, walk

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes

Q3: For what kinds of trips?

Bike, walk

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Accessibility, safety

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Bike, walk

Q8: (Optional) How did you hear about this study?

Twitter

#111

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 9:04:58 AM
Last Modified: Thursday, June 19, 2014 9:11:29 AM
Time Spent: 00:06:31
IP Address: 71.174.33.203

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bicycle

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes!

Q3: **For what kinds of trips?**

We live in East Cambridge, and would use this pathway for short and long trips for shopping, kids' lessons, to visit friends, to go to events on the river (festivals, etc.)

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Separate bike pathways
Safe crossings - for kids and adults. I regularly commute to work using the Fresh Pond bike routes. Many cars do not stop at the stoplight when it's red, and I have never seen this enforced. This is not dangerous for me, as I don't expect them to stop, but is dangerous for kids who might reasonably expect cars to stop

Q5: **What should its relationship be to Vassar Street?**

If it can connect to the awesome bike path on Vassar, that would be great.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

See response to question 3

Q8: **(Optional) How did you hear about this study?**

city email

#112

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 3:41:06 PM
Last Modified: Thursday, June 19, 2014 3:45:41 PM
Time Spent: 00:04:35
IP Address: 74.82.64.145

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bicycle: Sydney, Main, MemDrive
Bus: #1 #47 #CT1 #CT2
Walk: side streets etc

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Absolutely!

Q3: For what kinds of trips?

Shopping, commuting, fun

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Clearance for safety

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Shopping, commuting, fun
(visiting friends, restaurants)

Q8: (Optional) How did you hear about this study?

Facebook feed (MassBike)

#113

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 3:44:45 PM
Last Modified: Thursday, June 19, 2014 4:06:57 PM
Time Spent: 00:22:12
IP Address: 71.184.180.121

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I often travel and visit different points of interest in the area roughly between BU and Cambridge Galleria. I travel mostly on bike, and there is no public transport going in this direction (NE-SW). Adding a train together with bike and walk path would be great!

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Absolutely, without a doubt. Much needed!

Q3: For what kinds of trips?

There is no public transport going in this direction today, all traffic is going thru a congested Memorial Drive, forcing people into cars.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Light rail with frequent stops, good and safe bike and walk paths.

Q5: What should its relationship be to Vassar Street?

Vassar is a great example of combining and blending a vehicle traffic with bikes path and sidewalk. However, Vassar traffic is more local. There is is great need for a light rail to connect Allston with Cambridge MIT and east Cambridge area. It would also re-leave some congestion from Green and Red lines.

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

Any trips between points in Allston and East Cambridge/MIT areas.

Q8: (Optional) How did you hear about this study?

Cambridge Cronicle

#114

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 4:17:41 PM
Last Modified: Thursday, June 19, 2014 4:18:22 PM
Time Spent: 00:00:41
IP Address: 198.228.192.208

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?	*Respondent skipped this question*
Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?	*Respondent skipped this question*
Q3: For what kinds of trips?	*Respondent skipped this question*
Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?	*Respondent skipped this question*
Q5: What should its relationship be to Vassar Street?	*Respondent skipped this question*
Q6: If the Grand Junction Path was built, would you use it?	Yes
Q7: For what kinds of trips?	*Respondent skipped this question*
Q8: (Optional) How did you hear about this study?	*Respondent skipped this question*

#115

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 4:40:51 PM
Last Modified: Thursday, June 19, 2014 4:43:11 PM
Time Spent: 00:02:20
IP Address: 108.7.4.226

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bike, T

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

short trips, excercise

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

land taking

Q5: **What should its relationship be to Vassar Street?**

don't know

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

work out, pleasure

Q8: **(Optional) How did you hear about this study?**

Facebook

#116

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 5:11:41 PM
Last Modified: Thursday, June 19, 2014 5:15:55 PM
Time Spent: 00:04:14
IP Address: 18.189.60.60

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I bike up and down Vassar Street and Amherst Alley.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

No, it would not improve my mobility along the section I use, because I already use Vassar Street which is fine.

Q3: For what kinds of trips?

I make commute trips from home to my office at MIT.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

The crossing of Mass Ave will be key. Crossing Mass Ave is really the only problem with the Vassar Street cycle track; I wish we would just fix that intersection instead of building a whole new parallel path.

Q5: What should its relationship be to Vassar Street?

I do not think the part of the path that parallels Vassar Street needs to be built. It is completely redundant and a silly thing to do. The northern part is nice but the part that is like twenty yards away from Vassar Street is just a ridiculous waste of money. Biking along that corridor (on either Vassar or Albany) is already very easy. Sure, crossing Mass Ave can be tough but so what? Just fix the intersections at Mass Ave rather than building a whole new redundant path. Note that I do think the northern part (after Vassar Street ends) that goes off towards Somerville would be very useful.

Q6: If the Grand Junction Path was built, would you use it?	No
Q7: For what kinds of trips?	*Respondent skipped this question*
Q8: (Optional) How did you hear about this study?	*Respondent skipped this question*

#117

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 5:23:46 PM
Last Modified: Thursday, June 19, 2014 5:27:17 PM
Time Spent: 00:03:31
IP Address: 71.232.19.184

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

walk/ted line

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

YES!

Q3: **For what kinds of trips?**

many

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

make it pretty like the hyline in NYC

Q5: **What should its relationship be to Vassar Street?**

?

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

many

Q8: **(Optional) How did you hear about this study?**

Facebook Mass Bike

#118

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 6:17:45 PM
Last Modified: Thursday, June 19, 2014 6:27:38 PM
Time Spent: 00:09:53
IP Address: 173.48.208.190

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle, transit, walk (in order of frequency)

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes.

Q3: **For what kinds of trips?**

For me, biking to/from work.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

crossings, and specifically the Mass Ave crossing.

Q5: **What should its relationship be to Vassar Street?**

I don't see any problem with vassar st being a complete street and paralleling a MUP. It just provides more options for people.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Trips to work.

Q8: **(Optional) How did you hear about this study?**

MassBike Facebook post.

#119

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 6:49:00 PM
Last Modified: Thursday, June 19, 2014 6:50:57 PM
Time Spent: 00:01:57
IP Address: 24.147.11.194

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Mass Ave, Western ave, BU bridge, Comm Ave, Main Street, Cambridge Steer, Broadway

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes! And safer for all travelers, regardless of their transportation mode.

Q3: For what kinds of trips?

To and from work, visiting other neighborhoods in the city.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Connection/routes

Q5: What should its relationship be to Vassar Street?

Connect onto or run alongside?

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

To and from work and other neighborhoods in the city that I frequent, which are many!

Q8: (Optional) How did you hear about this study?

Boston.com

#120

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 8:27:34 PM
Last Modified: Thursday, June 19, 2014 8:31:15 PM
Time Spent: 00:03:41
IP Address: 209.6.202.175

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, walk. Streets

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes!

Q3: **For what kinds of trips?**

Commuting mainly, pleasure.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Bridge connection to boston, connection to somerville community path.

Q5: **What should its relationship be to Vassar Street?**

Access from vassar would be nice

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Commuting mainly, access to other bike paths.

Q8: **(Optional) How did you hear about this study?**

Friend

#121

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 19, 2014 11:03:01 PM
Last Modified: Thursday, June 19, 2014 11:35:36 PM
Time Spent: 00:32:35
IP Address: 71.174.128.132

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle.
BU Bridge > Brookline St. > Granite St. > Riverside Rd.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Hells yeah.

Q3: **For what kinds of trips?**

Bicycle.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Difficult and dangerous intersections for cyclers, like at Brookline St. & Memorial Drive.

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Bicycle.

Q8: **(Optional) How did you hear about this study?**

Facebook.

#122

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 20, 2014 12:50:33 AM
Last Modified: Friday, June 20, 2014 12:51:58 AM
Time Spent: 00:01:25
IP Address: 98.217.38.175

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?	*Respondent skipped this question*
Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?	*Respondent skipped this question*
Q3: For what kinds of trips?	*Respondent skipped this question*
Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?	*Respondent skipped this question*
Q5: What should its relationship be to Vassar Street?	*Respondent skipped this question*
Q6: If the Grand Junction Path was built, would you use it?	*Respondent skipped this question*
Q7: For what kinds of trips?	*Respondent skipped this question*

Q8: (Optional) How did you hear about this study?

Maybe

#123

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 20, 2014 3:29:30 AM
Last Modified: Friday, June 20, 2014 3:31:25 AM
Time Spent: 00:01:55
IP Address: 50.153.134.6

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Vassar Street

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes!

Q3: **For what kinds of trips?**

All kinds

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Safe intersections.

Q5: **What should its relationship be to Vassar Street?**

Should be able to cross to Vassar Street

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

All kinds

Q8: **(Optional) How did you hear about this study?**

Facebook

#124

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 20, 2014 3:29:30 AM
Last Modified: Friday, June 20, 2014 3:31:26 AM
Time Spent: 00:01:56
IP Address: 50.153.134.6

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Vassar Street

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes!

Q3: **For what kinds of trips?**

All kinds

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Safe intersections.

Q5: **What should its relationship be to Vassar Street?**

Should be able to cross to Vassar Street

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

All kinds

Q8: **(Optional) How did you hear about this study?**

Facebook

#125

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 20, 2014 4:21:34 AM
Last Modified: Friday, June 20, 2014 5:14:14 AM
Time Spent: 00:52:40
IP Address: 67.52.130.30

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bicycle - Broadway, Galileo, Vassar, Mass Ave
Red Line

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes. Right now, the west end of Vassar Street is a dead end for cyclists. Have you ever seen a single cyclist take the lane on Memorial Drive west bound? No crossing *OR* left turn to Memorial Drive east bound. The sidewalk on Memorial Drive to BU rotary is appalling as well, especially on the bridge over the tracks. Connections to BU bridge are therefore very poor.

Better off bailing and heading over Harvard (Mass Ave) Bridge *OR* cycling though Cambridgeport to BU rotary.

Q3: For what kinds of trips?

Everything but work commute.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Vassar Street to Grand Junction/under BU bridge connection at the athletic fields.

Connections on the Boston Side to Colleges of the Fenway / Longwood Medical Area.

Boat under a Train and Bike under a Car and Bike under a Plane. Yeah. Might be a transportation singularity.

Q5: What should its relationship be to Vassar Street?

If for any reason the Grand Junction path can't make it through this section, Vassar Street is an alternative *IF* the tie ins to the rest of the Grand Junction path to/from Vassar are well thought out.

However, it looks like a well designed Grand Junction Path should be faster and safer than Vassar Street for cyclists.

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

Everything but work commute.

Q8: (Optional) How did you hear about this study?

MassBike

#126

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 20, 2014 5:43:51 AM
Last Modified: Friday, June 20, 2014 5:46:02 AM
Time Spent: 00:02:11
IP Address: 205.135.136.10

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bike, walk, bus

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes very much so

Q3: **For what kinds of trips?**

commuting, recreation and errands

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

not special comes to mind

Q5: **What should its relationship be to Vassar Street?**

separate from Vassar as much as possible

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

commuting, recreation and errands

Q8: **(Optional) How did you hear about this study?**

facebook of massbike

#127

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 20, 2014 6:25:05 AM
Last Modified: Friday, June 20, 2014 6:26:53 AM
Time Spent: 00:01:48
IP Address: 18.62.28.241

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Cycling via Vassar or Albany

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Better cycling, though it's already pretty good. The Mass Ave intersection is terrible!

Q3: For what kinds of trips?

Cycling

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Mass Ave intersection is terrible!

Q5: What should its relationship be to Vassar Street?

I think that on Vassar is fine

Q6: If the Grand Junction Path was built, would you use it? Yes

---

Q7: For what kinds of trips?

Cycling, getting around. It's on my way to MIT from my house

Q8: (Optional) How did you hear about this study?

Fbook and MIT cycling Club

#128

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 20, 2014 7:22:36 AM
Last Modified: Friday, June 20, 2014 7:26:13 AM
Time Spent: 00:03:37
IP Address: 98.217.177.10

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Walking and primarily.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes

Q3: For what kinds of trips?

Walking and biking.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Intersections with roads, continuity across at segments.

Q5: What should its relationship be to Vassar Street?

Would no longer need vassal street cyclotrack

Q6: If the Grand Junction Path was built, would you use it?	Yes
Q7: For what kinds of trips?	*Respondent skipped this question*

Q8: (Optional) How did you hear about this study?

MassBike and Boston Cyclist Union

#129

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 20, 2014 8:14:00 AM
Last Modified: Friday, June 20, 2014 8:39:30 AM
Time Spent: 00:25:30
IP Address: 71.174.142.222

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bike, walk, auto

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes I would use bike path and pedestrian path.

Q3: **For what kinds of trips?**

travel to work shopping and recreation from my home near Central Square

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Complete (continuous) bike path should be highest priority. This is unprecedented opportunity to connect urban bike paths with Minuteman Path and Beyond. Biking on BU bridge is currently very dangerous. Use of the old rail bridge for cycling would be fantastic.

Q5: **What should its relationship be to Vassar Street?**

Not clear. Vassar street bike path near MIT is very congested, many pedestrians, driveways, parking garages, etc. The Grand Junction route would be major improvement.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

to work at MIT, shopping and recreation by bike from my home near Central Square..

Q8: **(Optional) How did you hear about this study?**

Cambridge Chronicle

#130

COMPLETE

Collector: New Web Link (Web Link)
Started: Friday, June 20, 2014 8:47:12 AM
Last Modified: Friday, June 20, 2014 8:52:21 AM
Time Spent: 00:05:09
IP Address: 108.49.96.66

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

bicycling, car. From Kendall: Albany, Waverly, Henry, hellacious rotary, BU Bridge. Reverse: Mem drive/Vassar

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Oh yeah

Q3: For what kinds of trips?

Bicycling Kendall to BU area

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

turning the RR bridge into a path

Q5: What should its relationship be to Vassar Street?

I guess it would remove the need for the great bike lanes on Vassar

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

Cycling

Q8: (Optional) How did you hear about this study?

Facebook via MassBike

#131

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 22, 2014 6:43:40 PM
Last Modified: Sunday, June 22, 2014 6:46:26 PM
Time Spent: 00:02:46
IP Address: 18.101.16.206

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Walking, bicycling, bus

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

No, duplicative of the cycle track along Vassar St.

Q3: For what kinds of trips?	*Respondent skipped this question*

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Reconsider whether or not a multi-use path is actually necessary, instead of other improvements to the public realm (i.e. green space, outdoor seating, public gardens, etc.)

Q5: **What should its relationship be to Vassar Street?**

Non-duplicative

Q6: **If the Grand Junction Path was built, would you use it?**	No
Q7: For what kinds of trips?	*Respondent skipped this question*
Q8: (Optional) How did you hear about this study?	*Respondent skipped this question*

#132

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 22, 2014 7:03:59 PM
Last Modified: Sunday, June 22, 2014 7:08:04 PM
Time Spent: 00:04:05
IP Address: 166.205.51.252

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Walk, bike

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

A bit

Q3: **For what kinds of trips?**

Commute to campus and local leisure activities, such as going to a restaurant.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Safety with train, bike path that has ramp access to places it connects.

Q5: **What should its relationship be to Vassar Street?** *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?** *Respondent skipped this question*

Q8: **(Optional) How did you hear about this study?**

Email from Catherine

#133

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 22, 2014 7:44:30 PM
Last Modified: Sunday, June 22, 2014 7:46:16 PM
Time Spent: 00:01:46
IP Address: 76.119.232.235

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Walking, Biking. Mass ave. Main Street. Vassar.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes.

Q3: **For what kinds of trips?**

Biking, walking.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Accessibility for users of all ability levels.

Q5: **What should its relationship be to Vassar Street?**

Parallel and connected.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Biking. walking. Maybe jogging.

Q8: **(Optional) How did you hear about this study?**

Through an email sent by Catherine V.

#134

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 22, 2014 8:38:48 PM
Last Modified: Sunday, June 22, 2014 8:39:56 PM
Time Spent: 00:01:08
IP Address: 50.241.95.170

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, foot

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes!

Q3: **For what kinds of trips?**

leisure and commute

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

safe connections to other bike routes, improved bike routes in the vicinity

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

leisure and commute

Q8: **(Optional) How did you hear about this study?**

MIT email list

#135

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 22, 2014 10:11:55 PM
Last Modified: Sunday, June 22, 2014 10:19:29 PM
Time Spent: 00:07:34
IP Address: 142.254.24.16

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Walking and Bicycling

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Absolutely.

Q3: For what kinds of trips?

Going to the grocery store, visits between friends, going out on the town, jogging, or just walking or cycling around town.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

It should be crossable, it shouldn't be too broken at intersections, and it should be visible and safe at night (well-lit). It should have bike and pedestrian paths that can reasonably accommodate bikes, joggers, people walking dogs, razor scooters, and skateboards. It should give plenty of warning about coming trains and the trains should slow down through the area, but I think it is fine if the pedestrian space overlaps the train tracks in many places. I have seen this done successfully many times. Currently the train track serves as a major barrier between the neighborhoods on either side.

Q5: What should its relationship be to Vassar Street?

friendly.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

As mentioned above, "Going to the grocery store, visits between friends, going out on the town, jogging, or just walking or cycling around town."

Q8: (Optional) How did you hear about this study?

through a department mailing list (I'm a grad student in city planning).

#136

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 12:33:45 AM
Last Modified: Monday, June 23, 2014 12:45:18 AM
Time Spent: 00:11:33
IP Address: 193.97.170.5

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Primarily bicycle coming from Inman Square. Travel on Broadway or Hampshire street and then cut through MIT property to reach Vassar (difficult connection due to tracks)

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

It would help improve the throughput to the BU bridge, for instance. The path along the river is in terrible shape, so a well-designed bike path would be beneficial.

Q3: For what kinds of trips? *Respondent skipped this question*

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Do not make it a mixed use path. This creates problems for both bicycles and pedestrians, and each should have their own space on the path.

Q5: What should its relationship be to Vassar Street?

It should be accessible to Vassar.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips? *Respondent skipped this question*

Q8: (Optional) How did you hear about this study? *Respondent skipped this question*

#137

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 12:42:58 AM
Last Modified: Monday, June 23, 2014 12:50:05 AM
Time Spent: 00:07:07
IP Address: 80.79.208.6

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bicycle

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

No, the bike path directly parrallel on Vassar is very convenient already.

Q3: For what kinds of trips?

It would not be essential. I travel to MIT from Cambridge port in this area

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

There are a number of homeless people living near Fort Washington Park. The project should take into consideration the needs of these people and the reasons why they have elected to use this area.
Safety is another important issue on the corridor at night.

Q5: What should its relationship be to Vassar Street?

That is a key issue, Vassar provides a route almost exactly parallel to the track and these facilities are already very good

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

I would you use it to get to MIT for school and work but that would mean I would stop using the Vassar cycle path. This money could be better spent on a different project

Q8: (Optional) How did you hear about this study? *Respondent skipped this question*

#138

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 1:03:03 AM
Last Modified: Monday, June 23, 2014 1:06:07 AM
Time Spent: 00:03:04
IP Address: 18.101.16.185

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike on vassar

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

No

Q3: For what kinds of trips? *Respondent skipped this question*

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

A reason to use it rather than streets

Q5: What should its relationship be to Vassar Street?

Totally different: a linear park or mountain bike course or something, there's plenty of bike lanes already

Q6: If the Grand Junction Path was built, would you use it? No

Q7: For what kinds of trips? *Respondent skipped this question*

Q8: (Optional) How did you hear about this study?

Email

#139

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 1:40:33 AM
Last Modified: Monday, June 23, 2014 4:35:29 AM
Time Spent: 02:54:56
IP Address: 213.152.245.252

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Walking and biking

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

yes

Q3: For what kinds of trips?

biking. I don't think it would help walking trips at all.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

safe crossings at major arterials (Mass Ave, Main St) and interaction between modes.

Q5: What should its relationship be to Vassar Street?

This is going out on a limb, but what about making the grand junction path bikes-only, that is, closed to pedestrians. Grand Junction path can then be a bicycle "highway" allowing cyclists to go much faster, and safer for both bikes and peds by eliminating the potential for collisions. Vassar can stay as the pedestrian route, since the cycletrack on Vassar already functions as an extension of the sidewalk anyway. Because the cycle track is at the same height as the sidewalk, there's too many pedestrians walking obliviously along it for it to be a good route for bicycles.

Post signage at Vassar indicating that cyclists should use the Grand Junction Path (but it's probably not worth the $$ to remove the cycle track). Post signage at Grand Junction telling pedestrians to use Vassar Street. Also post signs along Grand Junction telling all users to keep right and maybe paint a yellow line down the middle of the path to reinforce this.

Because Grand Junction and Vassar are so nearly identical in their routes, I don't think it's inconvenient for either pedestrians or bicyclists to be segregated.

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

bicycle trips to BU area

Q8: (Optional) How did you hear about this study?

Catherine Vanderwaart

#140

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 6:24:13 AM
Last Modified: Monday, June 23, 2014 7:07:21 AM
Time Spent: 00:43:08
IP Address: 140.241.0.20

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Walking

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Absolutely!!!!!

Q3: **For what kinds of trips?**

Getting across the river; to MIT; to Cambrigdeport.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Continuation up into East Cambridge past Kendall Square.

Q5: **What should its relationship be to Vassar Street?**

Connect with existing bike path

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: For what kinds of trips?

Respondent skipped this question

Q8: (Optional) How did you hear about this study?

Respondent skipped this question

#141

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 7:31:08 AM
Last Modified: Monday, June 23, 2014 7:33:03 AM
Time Spent: 00:01:55
IP Address: 18.111.92.55

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Vassar/Memorial drive: running, walking, biking

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes, greatly

Q3: **For what kinds of trips?**

excersive and recreation, connection to BU

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

landscaping, safety along tracks, lighting

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

exercise, recreation

Q8: (Optional) How did you hear about this study? *Respondent skipped this question*

#142

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 7:58:21 AM
Last Modified: Monday, June 23, 2014 9:13:33 AM
Time Spent: 01:15:12
IP Address: 146.243.224.171

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

I dont usually use that rail corridor as it seems poorly developed and cutoff from both cambridge port and MIT campus

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes absolutely, it would help provide connectivity to the charles river and MIT campus

Q3: **For what kinds of trips?**

bikeways, dog walks amd pedestrian trails with proper street lighting and maybe marked crossings at fort washington park and pacific street would be great to enhance access to MIT and then extend to charles river.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

safety, corridor enhancement, greenway creation, sound mitigation, access and connectivity.

Q5: **What should its relationship be to Vassar Street?**

this pedestrian and bike trail along the rail corridor can be linked to vassar at key locations along pacific street to give easy access to all the student dorms- sidney pacific, ashdown and warehouse , to the MIT campus and recreation area.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

trips from campus to union square, trips from ashdown-sidney pacific dorms to charles river, BU bridge and across to boston.

Q8: **(Optional) How did you hear about this study?**

MIT email. I am a City Planning student at DUSP. My email is srawoot@mit.edu.

#143

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 9:35:26 AM
Last Modified: Monday, June 23, 2014 9:40:10 AM
Time Spent: 00:04:44
IP Address: 98.110.171.234

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bicycle, bus, walk, rarely private auto. Longfellow, Harvard, & BU bridges. Mass Ave, Main Street, Hampshire Street, Cambridge Street, Vassar Street.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Absolutely!!!

Q3: **For what kinds of trips?**

Crossing the BU bridge. Anything from BU to East Cambridge.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Path must be continuous, and afford more utility than a similar trip along parallel paths. Path should connect straight across at ALL road crossings. Should remain on one side of the tracks, not skip back and forth.

Q5: **What should its relationship be to Vassar Street?**

Path should connect to Vassar Street at many logical locations.

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

What I already said.

Q8: **(Optional) How did you hear about this study?**

Email from grandjunctionpath@gmail.com.

#144

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 7:52:21 PM
Last Modified: Monday, June 23, 2014 8:01:31 PM
Time Spent: 00:09:10
IP Address: 76.119.239.7

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

I bike and walk morning & early evening, in and around MIT, Cambridgeport, the Hyatt.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes! Mobility and safety.

Q3: **For what kinds of trips?**

Commuting and re reTion

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Keep it maintained, well lit, clear signage for walkers and bikers, separate pathways for walkers and bikers; post rules for bikers regarding speed, passing, rules of road, etc.

Q5: **What should its relationship be to Vassar Street?**

Delineate it clearly.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Commuting and Recreation, I bike to work in Central sq and sometimes have meetings that I bike to in the area.

Q8: **(Optional) How did you hear about this study?**

Green port email list

#145

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 8:38:19 PM
Last Modified: Monday, June 23, 2014 8:41:00 PM
Time Spent: 00:02:41
IP Address: 71.126.232.71

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike, car, foot.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes.

Q3: For what kinds of trips?

Commuting and recreation.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Connections to Allston amd the Minuteman/Smvl. Comm. Path.

Q5: What should its relationship be to Vassar Street?

Parallel.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Commuting and recreation.

Q8: (Optional) How did you hear about this study?

email

#146

COMPLETE

Collector: New Web Link (Web Link)
Started: Monday, June 23, 2014 9:47:33 PM
Last Modified: Monday, June 23, 2014 9:59:48 PM
Time Spent: 00:12:15
IP Address: 120.149.53.92

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Walk and bicycle - Albany St, Mass Ave, Vassar St

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Unlikely - there are already adequate pedestrian and bicycle facilities on Vassar St. But may improve bicycle mobility once the future connections are built.

Q3: For what kinds of trips?

Commuting. The railway corridor is very unattractive and probably wouldn't appeal to people on leisure trips.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Connectivity to other paths - it is only going to be useful if the future connections are built. Ideally this would be all done straight away to avoid constructing a half-baked, fragmented network. Otherwise it is just a pointless duplication of Vassar Street. Why not spend that money on the Charles River bike path? It is in an atrocious, overcrowded condition outside MIT and has more potential for commuting trips to MIT and downtown Boston. This is because, unlike the Grand Junction corridor, it is already connected to something resembling a regional bicycle network.

Q5: What should its relationship be to Vassar Street?

If it were actually built, it would be more suitable for longer distance trips, as there are relatively few entrances and exits. Vassar Street would probably appeal more to shorter trips, say across the MIT campus.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Commuting by bicycle from West Campus to Kendall Square.

Q8: (Optional) How did you hear about this study?

Via e-mail

#147

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 24, 2014 4:05:41 AM
Last Modified: Tuesday, June 24, 2014 4:12:34 AM
Time Spent: 00:06:53
IP Address: 76.24.21.28

PAGE 1

Question	Answer
Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**	In the past, I used Albany Street to travel by bicycle.
Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**	From the point of view of a bicyclist, maybe, maybe not. It depends on the permitted uses. If bicyclists are permitted, safety for bicyclists might be improved.
Q3: **For what kinds of trips?**	What kinds are there?
Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**	Width, permitted usages, paving (or not), markings, access.
Q5: **What should its relationship be to Vassar Street?**	What is "relationship?"
Q6: **If the Grand Junction Path was built, would you use it?**	Yes
Q7: **For what kinds of trips?**	To move myself from place to place along or beyond the path.
Q8: **(Optional) How did you hear about this study?**	MIT Events calendar.

#148

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 24, 2014 4:24:30 AM
Last Modified: Tuesday, June 24, 2014 4:28:12 AM
Time Spent: 00:03:42
IP Address: 18.189.94.250

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

car, foot

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes - with separated foot/bike paths because the bike paths along the sidewalks on Vassar have me constantly looking and expecting to be hit by a bike while on foot. Also, possible east/west fixed-rail shuttle or similar to reduce TechShuttles blocking Vassar on stops

Q3: **For what kinds of trips?**

east/west campus connectivity with a convenience stop at Mass ave for student center

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

sensitivity to students living on north side of Simmons hall - there is enough Cambridge/industrial noise there already

Q5: **What should its relationship be to Vassar Street?**

connectivity at key points

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

east/west campus connectivity

Q8: **(Optional) How did you hear about this study?**

mit web site

#149

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 24, 2014 6:09:21 AM
Last Modified: Tuesday, June 24, 2014 6:13:56 AM
Time Spent: 00:04:35
IP Address: 64.119.141.134

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Mainly biking, sometimes walking. Use Ft Washington and the polka-dot crossing every day.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes

Q3: For what kinds of trips?

Commuting to the gym and work.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

safety from the trains, homes for the hobos, preserve the rabbit habitat somehow, get rid of the ragweed, clear lateral connections, motion detecting night lighting. One lane for bikes and one for pedestrians.

Q5: What should its relationship be to Vassar Street?

Just another cycle track grid.

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

Commuting to the gym and work.

Q8: (Optional) How did you hear about this study?

Greenport newsletter

#150

COMPLETE

Collector: New Web Link (Web Link)
Started: Wednesday, June 18, 2014 6:36:57 AM
Last Modified: Tuesday, June 24, 2014 8:08:16 AM
Time Spent: Over a day
IP Address: 198.0.186.190

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

bike

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes

Q3: **For what kinds of trips?**

trips that extend beyond red line

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

MIT's participation

Q5: **What should its relationship be to Vassar Street?**

I'd rather see a continuous,seamless pathway on the railroad corridor

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Travel between my home on the Cambridge/Somerville line near the Grand Junction corridor and MIT and BU.

Q8: **(Optional) How did you hear about this study?**

Facebook

#151

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 24, 2014 9:13:56 AM
Last Modified: Tuesday, June 24, 2014 11:34:01 AM
Time Spent: 02:20:05
IP Address: 71.174.189.160

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

A connection should be made on Buick St. connecting the green line to the red. Get us off the green line ASAP. Currently no buses or safe bike routes. Let Bu share in the traffic mess they have created with over building the area! -Give an area for all types of transit.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes and my friends would too! Some are green line and some of us are red line.

Q3: For what kinds of trips?

Any kind that are more direct and get us off the B train- especially during rain storm, big Bu or Fenway event must walk home because can't get on the trains because they are too crowded. Thanks Bu expansion and the expansion of Fenway park.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Have multiple points of entry for bicycles and pedestrians. Connect green line residents with red line residents. I would be nice if Bu shared the bus rides with their neighbors since they take all the room on the (T) as well as the parking. Don't invite more cars or buildings!

Q5: What should its relationship be to Vassar Street?

Many people use it to walk to where they are going.
Had some inexpensive houses and nice trees would be nice if the university gave some of it back as mixed income housing. Their expansions cause housing tensions and war with neighbors to try and get the place first. Few places left desirable and affordable. Could even require references and credit history.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Anything to get off the green line- also too small for bikes. Connection to other train stops very desirable. B (T) It is unreliable in terms of timing and takes longer and longer to get anywhere as universities expand.

Q8: (Optional) How did you hear about this study?

A friend in Cambridge told me. Cambridge has the most community spaces and nonprofit buildings that different non profit groups use. It is a shame its so far away. I am not near the 66.

#152

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 24, 2014 2:00:36 PM
Last Modified: Tuesday, June 24, 2014 2:07:54 PM
Time Spent: 00:07:18
IP Address: 71.232.13.4

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

car

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes

Q3: **For what kinds of trips?**

whole foods run, commute to work

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

A lot of protected green for the animals. A lot of wildlife will be impacted. I have had conversations with neighbors and most agree it is one of the last sacred places for native species that linger in the Kendall area. Many birds rely on this last patch of low use corridor. There are nests and natural sources of food. If we could have the pathway and add additional private vegetation it is a win win. It isn't all about us.

Q5: **What should its relationship be to Vassar Street?**

open for debate.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

walk and bike to whole foods, work

Q8: **(Optional) How did you hear about this study?**

member of ECPT and have been following this for years.

#153

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 24, 2014 2:07:54 PM
Last Modified: Tuesday, June 24, 2014 2:20:03 PM
Time Spent: 00:12:09
IP Address: 107.3.93.251

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Car, bike, and occasionally bypassing it via Bus/T

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

as long as it doesn't reduce inexpensive (free or metered) auto parking. I bike when I can, but I'm in my 50s and have health issues. I could have got a disability placard, but I look healthy enough (problems are biochemical & nerve damage) I'd get rocks thrown at me (metaphorically) if I used it. I can't afford paid-lot parking, and though I support bike paths, they sometimes take crucial parking (like in the Longwood Medical area).

Q3: For what kinds of trips?	*Respondent skipped this question*
Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?	*Respondent skipped this question*
Q5: What should its relationship be to Vassar Street?	*Respondent skipped this question*
Q6: **If the Grand Junction Path was built, would you use it?**	Yes
Q7: For what kinds of trips?	*Respondent skipped this question*

Q8: **(Optional) How did you hear about this study?**

via act-ma posting

#154

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 24, 2014 3:29:26 PM
Last Modified: Tuesday, June 24, 2014 3:36:05 PM
Time Spent: 00:06:39
IP Address: 205.197.64.2

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Vassar Street by bicycle, *not* on the cycle track -- in the actual roadway.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

No

Q3: For what kinds of trips? *Respondent skipped this question*

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Make it safer and more convenient to walk and cycle in nearby streets. Not along a rail line between the backs of industrial buildings.

Q5: **What should its relationship be to Vassar Street?**

Please remove the Vassar Street cycle tracks, and replace them with on-street bike lanes.

The cycle tracks are dangerous. Pedestrians walk and stand on them. And I don't blame them, because the tracks look like, and are, sidewalks.

They increase the likelihood of right-hook collisions with cars turning into driveways, because nobody is expecting fast-moving cyclists on the sidewalk. That's why for decades, bicyclists have been told to ride in the street.

And they don't get cleared of snow.

Q6: **If the Grand Junction Path was built, would you use it?** No

Q7: For what kinds of trips? *Respondent skipped this question*

Q8: **(Optional) How did you hear about this study?**

events.mit.edu

#155

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 24, 2014 6:58:49 PM
Last Modified: Tuesday, June 24, 2014 7:04:34 PM
Time Spent: 00:05:45
IP Address: 24.61.12.135

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I mostly bike, and use Vassar St. and Galileo Galilei way every day on my way from work to gymnastics at the Zesiger Fitness Center.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes, absolutely.

Q3: For what kinds of trips?

Cycling and walking.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Protection from cars and smart intersections with major roadways such as what is detailed here: http://www.protectedintersection.com/

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

I ride from my office at 35 Medford St. in Somerville to the Zesiger Center every day, and this route lies exactly along the railway where this Path would go, so I would use it every day to travel from work to MIT.

Q8: (Optional) How did you hear about this study?

I attended the event at MIT on 6/24/2014.

#156

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, June 24, 2014 8:00:26 PM
Last Modified: Tuesday, June 24, 2014 8:04:49 PM
Time Spent: 00:04:23
IP Address: 98.118.84.96

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

cycling: Mass Ave, Vassar St, BU Bridge, Main St, Paul Dudley bike path

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes

Q3: **For what kinds of trips?**

commuting to and from MIT area

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

link to Dudley bike path, easy access to Mass Ave

Q5: **What should its relationship be to Vassar Street?**

I see Vassar as a more local option, Grand Junction as more of a through route.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

If I was coming from or going to the Boston side, or headed through to the north

Q8: **(Optional) How did you hear about this study?**

MIT openhouse 6/24

#157

COMPLETE

Collector: New Web Link (Web Link)
Started: Wednesday, June 25, 2014 4:10:24 AM
Last Modified: Wednesday, June 25, 2014 4:14:22 AM
Time Spent: 00:03:58
IP Address: 24.61.12.135

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Vassar and Galileo Galilei, in the bike lanes.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes. There are lots of pedestrians in this area who walk in the bike path, or cross it suddenly without looking.

Q3: **For what kinds of trips?**

I commute this way every day.

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Easy access to/from cross roads. Obvious separation between bikers and pedestrians.

Q5: **What should its relationship be to Vassar Street?**

Run parallel to it.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Mostly commuting.

Q8: **(Optional) How did you hear about this study?**

Mother-in-law, who heard about it from Boston Cyclists Union.

#158

COMPLETE

Collector: New Web Link (Web Link)
Started: Wednesday, June 25, 2014 7:34:05 AM
Last Modified: Wednesday, June 25, 2014 7:37:13 AM
Time Spent: 00:03:08
IP Address: 18.90.2.184

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

walking, biking (my own and Hubway), metro (bus + subway)

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

sure

Q3: **For what kinds of trips?**

all kinds

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

that bikers and peds don't get hit by trains, and that there is enough space for both.

Q5: **What should its relationship be to Vassar Street?**

cordial

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

all kinds

Q8: **(Optional) How did you hear about this study?**

email

#159

COMPLETE

Collector: New Web Link (Web Link)
Started: Wednesday, June 25, 2014 7:48:25 AM
Last Modified: Wednesday, June 25, 2014 7:50:49 AM
Time Spent: 00:02:24
IP Address: 24.41.19.164

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

foot, car

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

perhaps

Q3: For what kinds of trips?

bicycle, rail

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Provision for rail connection from Lechmere/Kendall to Allston/Longwood. This is where the Urban Ring belongs.

Q5: What should its relationship be to Vassar Street?

Bikes on existing Vassar Street cycle track.

Q6: If the Grand Junction Path was built, would you use it?	Yes

Q7: For what kinds of trips?

Rail.

Q8: (Optional) How did you hear about this study?	*Respondent skipped this question*

#160

COMPLETE

Collector: New Web Link (Web Link)
Started: Wednesday, June 25, 2014 7:43:53 AM
Last Modified: Wednesday, June 25, 2014 7:51:53 AM
Time Spent: 00:08:00
IP Address: 38.97.98.194

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bicycle - I cross the tracks at Ft. Washington

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

YES

Q3: For what kinds of trips?

Bike & Pedestrian Commuting

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Hubway stations
Safe (non-skid) surfacing
NYC Highline type greenspaces; artspaces , gardens, sculpture, passive recreation, etc.

Q5: What should its relationship be to Vassar Street?

?? don't understand question.

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

Commuting, recreation, shopping, dining

Q8: (Optional) How did you hear about this study?

GreenPort listserve

#161

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, June 26, 2014 7:52:57 AM
Last Modified: Thursday, June 26, 2014 7:55:54 AM
Time Spent: 00:02:57
IP Address: 66.92.76.247

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

I travel via bike on Mass Ave, Vassar, cutting across that rail line, sometimes I bike through campus.

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

I'm not sure. There already are bike paths along Vassar. This is a different project all together, but improved mobility within campus (that awful parking lot area through under Building 9, etc) might be another useful use of time.

Q3: **For what kinds of trips?**

Biking

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Respondent skipped this question

Q5: **What should its relationship be to Vassar Street?**

Visible, but separate and landscaped enough to make it desirable. The greenway in East Boston could be a good example.

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

Biking between Kendall and MIT, but honestly I don't do this trip much.

Q8: **(Optional) How did you hear about this study?**

DUSP student email.

#162

COMPLETE

Collector: New Web Link (Web Link)
Started: Saturday, June 28, 2014 3:38:47 PM
Last Modified: Saturday, June 28, 2014 4:39:43 PM
Time Spent: 01:00:56
IP Address: 71.255.173.252

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

By Bicycle and MBTA Route 1 bus, occasionally walking.
BU Bridge down Sidney St to Mass Ave.
BU Bridge down Sidney to Putnam St.
Mass Ave via Harvard Bridge to Paul Dudley White Bike Path.
BU Bridge to Sidney to Mass Ave to Vassar St to Kendall Sq cinema.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Immediately, for neighbors with little kids and others learning to bike, it would provide a car-free path to bike on. It would also provide, hopefully, a tree-lined path for walkers and runners.
In the near future, making a connection to Kendall Square and to the Cambridge side of the PDW path would connect it to Jobs and other bike commuting routes.
In the long term, it would need to connect to both sides of the PDW path along the Charles and to the Community Path Extension being built.

Q3: For what kinds of trips?

Commuting, both work and school.
Pleasure trips for neighboring residents.
If the path were lit at night, it would provide a

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Connections for Pedestrians and cyclists noted in the previous questions.
Allow for future mass transit (BRT or light rail) connecting BU, MIT, Kendall Square, Somerville via the Green Line near BU and the GLX, hopefully at a future station near the Brickbottom/Twin Cities Plaza Area.

Q5: What should its relationship be to Vassar Street?

As a Multi-use path, it should be, during commuting hours, the Bicycle Super Highway/neighborhood bypass to Vassar Street's local access neighborhood street and cycletrack. During non commuting times, it would be a neighborhood greenway.

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Since I don't live or work in the area, I would be using it to get to Kendall Sq cinema, lectures and other events at MIT and also, if it connects to the PDW paths and the Green Line extension it would be a fantastic way for me to get out to the minuteman commuter bikeway and beyond.

Q8: (Optional) How did you hear about this study?

Through the LivableStreets Alliance.

#163

COMPLETE

Collector: New Web Link (Web Link)
Started: Sunday, June 29, 2014 6:39:09 PM
Last Modified: Sunday, June 29, 2014 6:41:03 PM
Time Spent: 00:01:54
IP Address: 50.157.204.104

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

On bike primarily down Boradway

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Cambridge <-> Boston

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Make it safe and inviting enough for even causal bikers

Q5: **What should its relationship be to Vassar Street?**

deicated/separated

Q6: **If the Grand Junction Path was built, would you use it?**

Yes

Q7: **For what kinds of trips?**

occasional trips to BU / Fenway area

Q8: **(Optional) How did you hear about this study?**

Cambridge Bikes! Facebook page

#164

COMPLETE

Answers Entered Manually

Collector: Web Link - Manual Entry 1 (Web Link)
Started: Monday, June 30, 2014 11:16:25 AM
Last Modified: Monday, June 30, 2014 11:55:31 AM
Time Spent: 00:39:06
IP Address: 198.233.85.218

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike: Mass Ave, Main, Vassar in vehicle travel lane. Sometimes Vassar bike path, but too many conflicts

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Unlikely

Q3: For what kinds of trips?

East Cambridge to BU Bridge, but that is rare for me. Most of my trips end at Central or MIT.

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Respondent skipped this question

Q5: What should its relationship be to Vassar Street?

Vassar: local : : GJ : express

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

East Cambridge to BU Bridge

Q8: (Optional) How did you hear about this study?

Invitation
City council, email Tim Toomey & Co

#165

COMPLETE

Answers Entered Manually

Collector: Web Link - Manual Entry 1 (Web Link)
Started: Monday, June 30, 2014 11:57:38 AM
Last Modified: Monday, June 30, 2014 12:01:01 PM
Time Spent: 00:03:23
IP Address: 198.233.85.218

PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Not many

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes!!

Q3: For what kinds of trips? *Respondent skipped this question*

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Accessibility for all

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: **If the Grand Junction Path was built, would you use it?** No

Q7: **For what kinds of trips?**

If anything,bike

Q8: **(Optional) How did you hear about this study?**

MIT Events

#166

COMPLETE

Answers Entered Manually

Collector: Web Link - Manual Entry 1 (Web Link)
Started: Monday, June 30, 2014 12:01:10 PM
Last Modified: Monday, June 30, 2014 12:08:06 PM
Time Spent: 00:06:56
IP Address: 198.233.85.218

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike form BU Bridge to Building 36 via Albany, through Ft. Wash then along Vassar

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

yes

Q3: For what kinds of trips?

Cyclists would have a dedicated path, skipping some crossings

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Respondent skipped this question

Q5: What should its relationship be to Vassar Street?

The path would be of partivular interests to MIT students living in Cambridgeport (north of tracks and west of Mass ave) who work/stufy (east of Mass ave and south of tracks) so access to MIT students is important

Q6: If the Grand Junction Path was built, would you use it?

Respondent skipped this question

Q7: For what kinds of trips?

Commuting through areag via bike

Q8: (Optional) How did you hear about this study?

Signs on door of STATA

#167

COMPLETE

Answers Entered Manually

Collector: Web Link - Manual Entry 1 (Web Link)
Started: Monday, June 30, 2014 12:08:10 PM
Last Modified: Monday, June 30, 2014 12:41:10 PM
Time Spent: 00:33:00
IP Address: 198.233.85.218

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I currently commute from Allston to Cambridge via Cambridge street to River Street for work. I also bike the Storrow Drive path to Mass ave.

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes

Q3: For what kinds of trips?

Commutign from work to home

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

It would be amazing if the path coudl connect Allston-Cambridge-Somerville!!!

Q5: What should its relationship be to Vassar Street? *Respondent skipped this question*

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Work, shopping, everyday commuting to get to places

Q8: (Optional) How did you hear about this study?

Frienda that are involved with the project. Cambridge Bikes Facebook group. Friends of Grand Junction Path Facebook Group

#168

COMPLETE

Answers Entered Manually

Collector: Web Link - Manual Entry 1 (Web Link)
Started: Monday, June 30, 2014 12:50:49 PM
Last Modified: Monday, June 30, 2014 12:53:48 PM
Time Spent: 00:02:59
IP Address: 198.233.85.218

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Walking, biking, car

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

yes

Q3: For what kinds of trips?

short trips in boston and cambridge areaa

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

width, dedicated routes for dofferent modes avoiding intersections (tunnels, bridges)

Q5: What should its relationship be to Vassar Street?

part of route

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

short tips by bike, foot

Q8: (Optional) How did you hear about this study?

News article

#169

COMPLETE

Answers Entered Manually

Collector: Web Link - Manual Entry 1 (Web Link)
Started: Monday, June 30, 2014 12:53:53 PM
Last Modified: Monday, June 30, 2014 1:19:39 PM
Time Spent: 00:25:46
IP Address: 198.233.85.218

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I live on Bristol STreet and walk or drive on Mass ave, Main st, Binney and/or CAmbridge Street to get in or out of town

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

As a walkwr, I am scared of bicycles crossing my path oblivious to their surroundings (earbuds)

Q3: For what kinds of trips?

I use the streets to walk to work (Central Sq.), walk my dog, shop fro groceries, drive to Milton and on and on

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

If they can find a way to silence the warning horn I would be happy. Also, for the traffic impeded by the train, an underground crossing maybe?

Q5: What should its relationship be to Vassar Street?

SInce it runs along the street? I am not sure unless you dig a tunnel

Q6: If the Grand Junction Path was built, would you use it? No

Q7: For what kinds of trips?

Bicycles and pedestrians walkign dogs do not go well together. But if I "WERE" to use it I would use it for recreation/exercise

Q8: (Optional) How did you hear about this study?

Area 4 Coalition

#170

COMPLETE

Answers Entered Manually

Collector: Web Link - Manual Entry 1 (Web Link)
Started: Monday, June 30, 2014 1:19:52 PM
Last Modified: Monday, June 30, 2014 1:25:11 PM
Time Spent: 00:05:19
IP Address: 198.233.85.218

PAGE 1

Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

Bike or walk. Mass ave to Vasar or cross near 235 Albany then Vassar

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Yes

Q3: For what kinds of trips?

Going to BU area or from Cambridgeport to East Cambridge

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Mass Ave crossing, train safety and noise

Q5: What should its relationship be to Vassar Street?

Good?

Q6: If the Grand Junction Path was built, would you use it?

Yes

Q7: For what kinds of trips?

Getting STATA, STATA to Ashdown, Mass ave to East Cambridge

Q8: (Optional) How did you hear about this study?

Walking by today

#171

COMPLETE

Answers Entered Manually

Collector: Web Link - Manual Entry 1 (Web Link)
Started: Monday, June 30, 2014 1:25:28 PM
Last Modified: Monday, June 30, 2014 1:30:26 PM
Time Spent: 00:04:58
IP Address: 198.233.85.218

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Q1: What modes and routes do you use to trave around the Grand Junction Corridor area?

I walk along sidewalk orimarily

Q2: Would a multi-use path along the Grand Junction Corridor improve mobility in this area?

Definitely. Until cars can pivot while moving or not induce adrenaline terror, they will remian ultimately lacking mobility.

Q3: For what kinds of trips?

Commuting, recreational

Q4: What are the key factors that need to be addressed for the Grand Junction Path to be successful?

Keeping the GJP a contiguous path is critical fro the success of the project or to replace Vassar, alowing for greater development space for MIT

Q5: What should its relationship be to Vassar Street?

I would like to see GJP used in conjuction with Vassar st

Q6: If the Grand Junction Path was built, would you use it? Yes

Q7: For what kinds of trips?

Commuting, recreational

Q8: (Optional) How did you hear about this study?

Friends of the GJP

#172

COMPLETE

Collector: New Web Link (Web Link)
Started: Tuesday, July 01, 2014 4:20:46 AM
Last Modified: Tuesday, July 01, 2014 4:22:35 AM
Time Spent: 00:01:49
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Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Main roads

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

Yes

Q3: **For what kinds of trips?**

Any and all

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

Wide enough marked clearly with wayfinding at junctions signs reminding rules of road

Q5: **What should its relationship be to Vassar Street?**

Not sure

Q6: **If the Grand Junction Path was built, would you use it?** Yes

Q7: **For what kinds of trips?**

Any and all

Q8: **(Optional) How did you hear about this study?** *Respondent skipped this question*

#173

COMPLETE

Collector: New Web Link (Web Link)
Started: Thursday, July 17, 2014 5:55:46 PM
Last Modified: Thursday, July 17, 2014 5:59:44 PM
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PAGE 1

Q1: **What modes and routes do you use to trave around the Grand Junction Corridor area?**

Bike, car

Q2: **Would a multi-use path along the Grand Junction Corridor improve mobility in this area?**

yes

Q3: **For what kinds of trips?**

out and about trips

Q4: **What are the key factors that need to be addressed for the Grand Junction Path to be successful?**

wide path so faster cyclists can easily pass slower cyclists

Q5: What should its relationship be to Vassar Street?	*Respondent skipped this question*
Q6: **If the Grand Junction Path was built, would you use it?**	Yes

Q7: **For what kinds of trips?**

out and about trips

Q8: (Optional) How did you hear about this study?	*Respondent skipped this question*

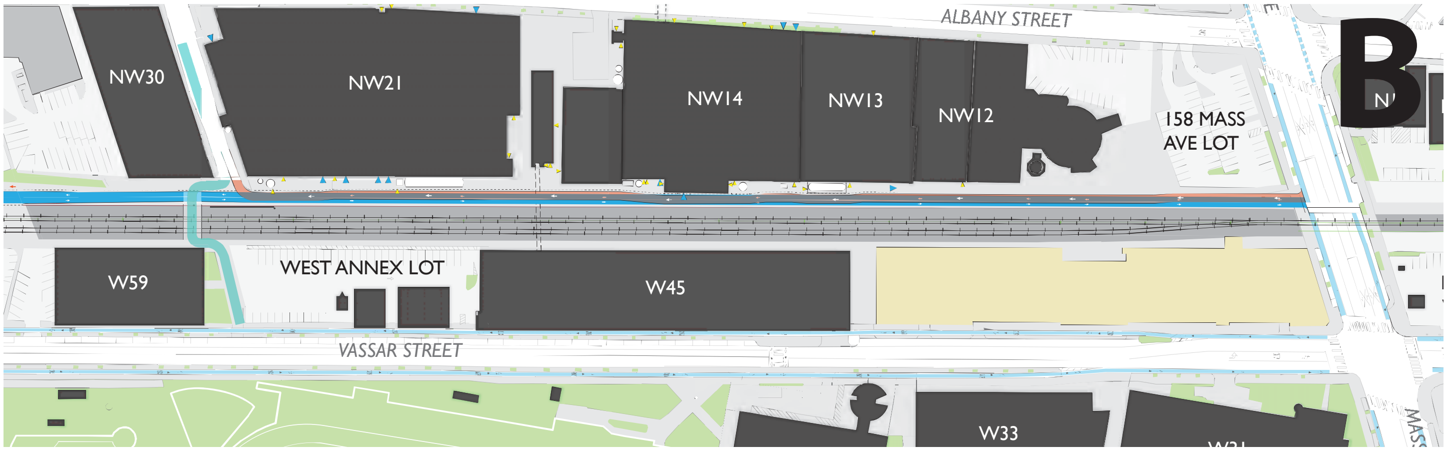
Appendix J

Path Options Not Selected

Options Not Selected and Their Evaluations

A total of eight options were developed and evaluated for the corridor. Two options (A and B) were developed for the corridor west of Mass Ave and six options (C through H) were prepared for the segment between Mass Ave and Main Street. On the west side, the primary variable is the width of the multi-use path (PATH) and the service drive (SD); for the eastern section, the location of the PATH also varies between the north and south sides of the rail corridor.

Option B - West of Mass Ave – 16-Foot Offset from Track Centerline



This option is similar to the preferred Option A except that the offset from the track centerline is set at 16 feet rather than 10 feet. Sixteen feet is the dimension of the MassDOT easement. In this option there is overlap of the SD with the PATH continuously along its length with several instances of encroachment into opposing traffic on the PATH. Given the service and delivery vehicles on the corridor, a shared street concept is the only feasible means of combining vehicle, bicycle and pedestrian modes of travel. Examples of a shared street can be found in the Greater Boston area; most notably the portion of Washington Street in Downtown Crossing where pedestrians and bicyclists mix regularly with service and delivery vehicles as well as taxis and buses. *The shared street option is less desirable than the separate side-by-side PATH and SD in Option A*

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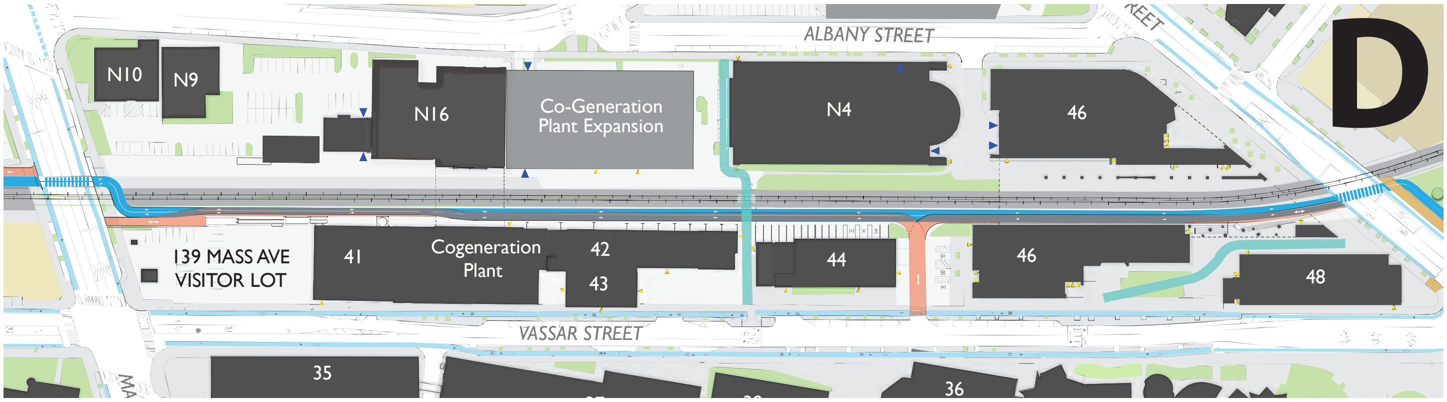
Option D - East of Mass Ave – South of Tracks

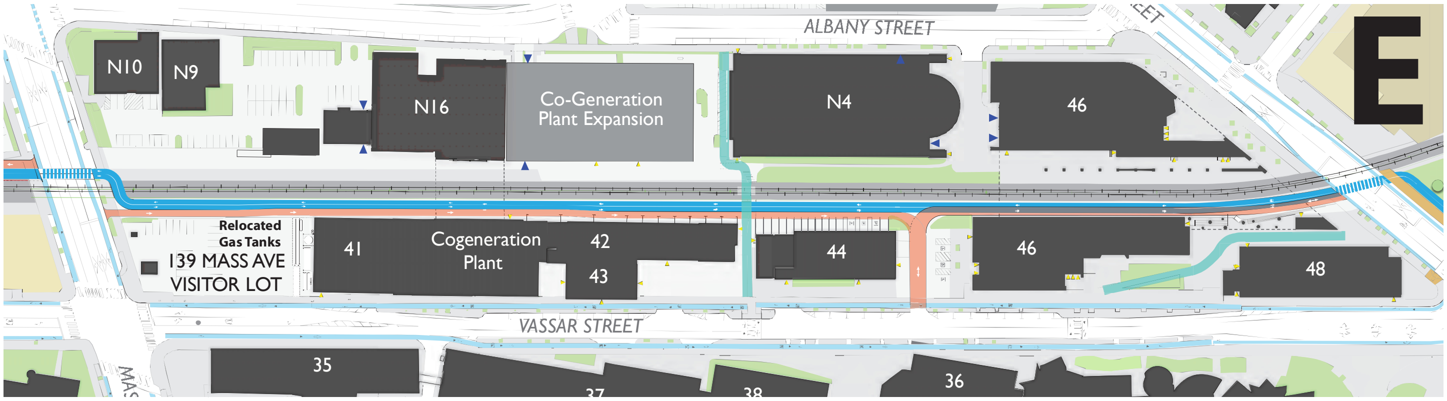


This option places the multi-use path on the south side of the tracks from Mass Ave to Main Street. Starting at Mass Ave, the PATH begins on the north side of the tracks to align with the path west of Mass Ave, and then crosses the tracks on the east side of the existing Mass Ave sidewalk before turning eastward. The PATH at this location is 14 feet wide. The SD enters from Mass Ave and within about 100 feet encroaches onto the PATH to clear a group of gas storage tanks . The portion of the SD between Mass Ave and the tanks must be maintained as two-way for trucks to service the tanks (about twice per week). The distance between the tanks and the railroad fencing is about 12 feet, which must accommodate both the PATH and the SD. This means the PATH becomes 8 feet wide with 2 foot buffers on each side; service vehicles would use the same space, creating opposing traffic between the vehicles and path users. Past the tanks, there is parking at the back of the co-generation plant and Building 44 which is maintained under this option, but the greater

🟧 **Service Drive**
🟦 **Multi-Use Path**

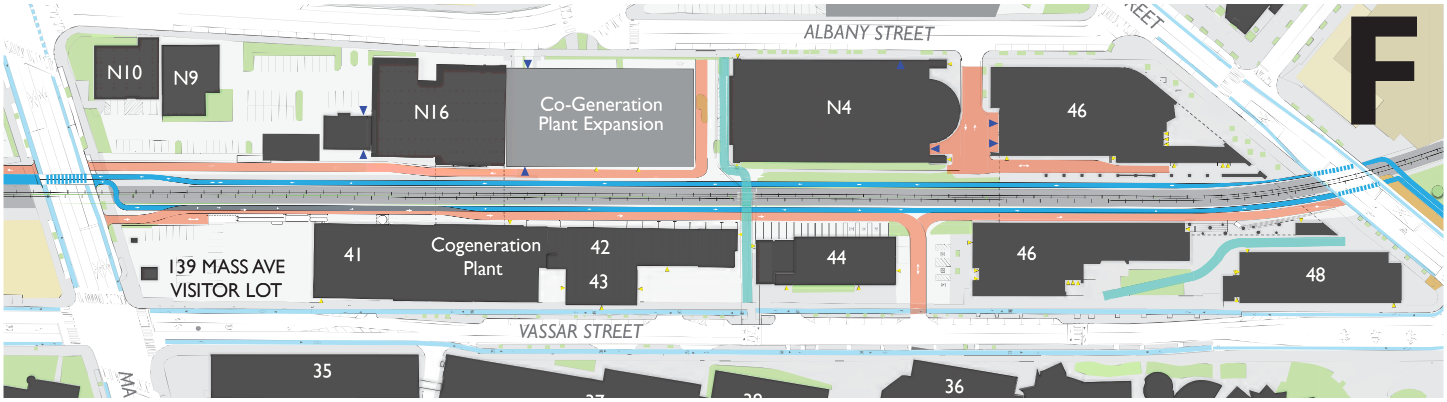
width of the section allows the PATH to widen to 12 feet. This width would allow the SD to operate with minimal overlap into oncoming path users, but the eastbound lane of the PATH and the SD would be overlapped. With some adjustments to the buffer (two feet on each side of the PATH) the conflict with opposite-direction traffic could be eliminated. East of Building 44 the PATH and SD continue under the Brain & Cog Building where there is an available with for both PATH and SD of seventeen feet, creating overlap. There is an additional conflict as the SD approaches Main Street where vehicles will need to access the loading dock for Building 48. *The space available for this option is too narrow for a two-way PATH and, additionally, vehicles parking in the corridor would need to use the space of the PATH for maneuvering.*

Option E - East of Mass Ave – South of Tracks – Relocated Gas Tanks


ALBANY STREET
E
N10
N9
N16
Co-Generation Plant Expansion
N4
46
Relocated Gas Tanks
139 MASS AVE VISITOR LOT
41
Cogeneration Plant
42
43
44
46
48
VASSAR STREET
35
38
36

This option is similar to Option D except that it relocates the gas storage tanks to the parking lot on the west side of Building 41 and eliminates the permit parking behind the co-generation plant and Building 44. At Mass Ave the PATH is 14 feet wide but narrows to 12 feet as it passes behind Building 41 and a portion of the co-generation plant. The 10-foot SD runs parallel to the PATH without any overlap. Approaching the area behind Building 44, the PATH widens back to 14 feet and continues with the SD to Main Street as described in Option D. *This option creates additional space but requires the relocation of both gas storage tanks and parking. The narrow space under Brain & Cog remains.*

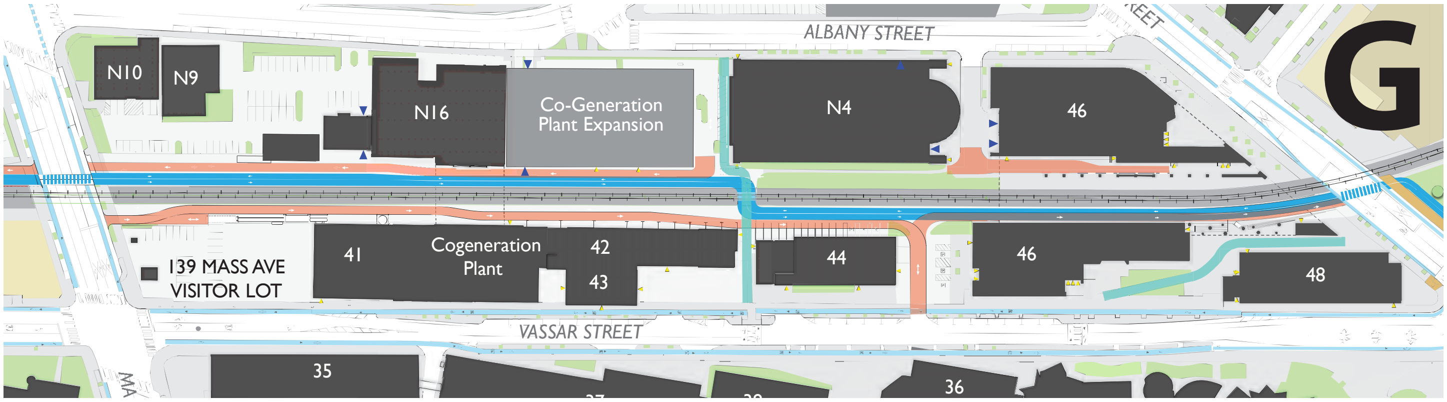
Option F - East of Mass Ave – Split North and South of Tracks


ALBANY STREET
F
N10
N9
N16
Co-Generation Plant Expansion
N4
46
139 MASS AVE VISITOR LOT
41
Cogeneration Plant
42
43
44
46
48
VASSAR STREET
35
36

This option splits the alignment with the west-bound path on the north side of the tracks and the east-bound path on the south side. The multi-use paths in this option are set at 6 feet wide plus two foot buffers on each side. On the north side there is no overlap between the PATH and the SD. At the eastern end, the path narrows to go through the 7-foot opening at Main Street adjacent to the tracks. On the south side the gas storage tanks are retained and the PATH and SD overlap, although travel for both is in the east-bound direction. At the Main Street end, trucks maneuvering in and out of the loading dock may not overlap with the PATH—depending on the driver's level of skill. *A significant concern in this option is that it would encourage wrong-way bicycle travel. Additionally, a higher level of maintenance would be required for snow plowing since the length of the path would be doubled.*

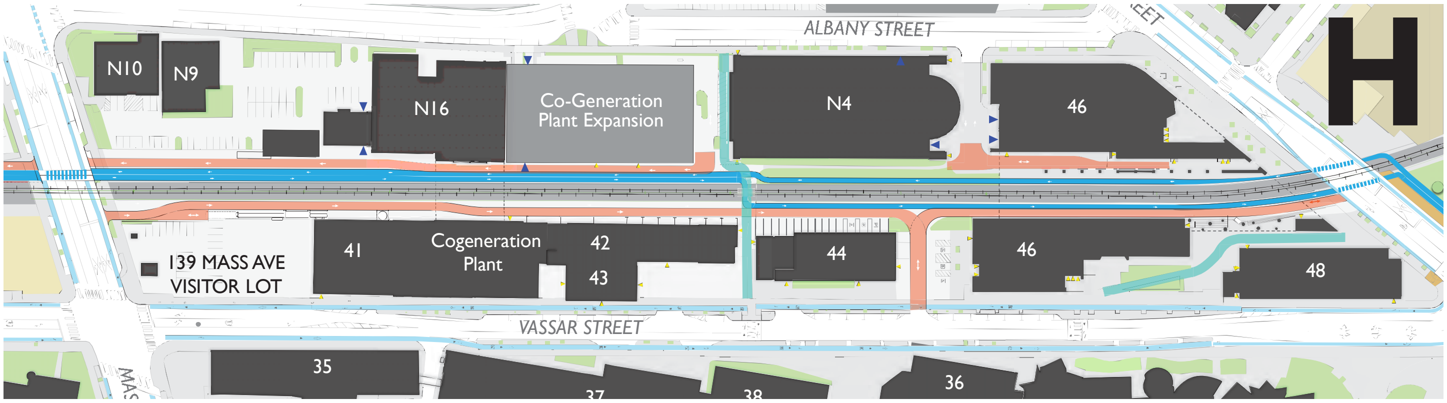
🟧 **Service Drive**
🟦 **Multi-Use Path**

Option G - East of Mass Ave – North of Tracks Changing to South of Tracks


ALBANY STREET
G
N10
N9
N16
Co-Generation Plant Expansion
N4
46
41
Cogeneration Plant
42
43
44
46
48
139 MASS AVE VISITOR LOT
VASSAR STREET
35
36

This option combines the western portion of the north (Option C) and eastern portion of the south (Option D) schemes with a connection between them at the track crossing at the Albany Street Garage. This option avoids the pinch point at the gas storage tanks behind Building 41 and also avoids the narrow openings at the Brain & Cog building along Main Street—two of the more troublesome aspects of the north and south options. By removing the parking behind Building 44, the SD can be shifted so that there is no overlap with the PATH. *However, in the 17-foot space under Brain and Cog, the PATH and SD overlap.*

Option H - East of Mass Ave – North of Tracks Changing to Split Path


ALBANY STREET
H
N10
N9
N16
Co-Generation Plant Expansion
N4
46
41
Cogeneration Plant
42
43
44
46
48
139 MASS AVE VISITOR LOT
VASSAR STREET
35
36
37
38

This option is a combination of previous Options C and F with a two-way path on the north side between Mass Ave and the Albany Garage rail crossing transitioning to a split path on both sides of the tracks from the rail crossing to Main Street. The advantage of this option is that it avoids the gas storage tanks and parking on the south side of the tracks between Mass Ave and the rail crossing and removes the opposite-direction-travel conflict between vehicles and west-bound bicycles on the south side of the tracks under the Brain and Cog building. *Similar to Option F, there is a concern about wrong-way bicycle travel on the one-way portions of the PATH.*

🟧 **Service Drive**
🟦 **Multi-Use Path**